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**"Let There Be Sight"**

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# The Sight-Saving Review

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## Seeing Through 1931

HERE is a factual account of the major activities during the past year in the struggle for conservation of vision

**I**T IS with much satisfaction that the National Society for the Prevention of Blindness looks back on a year of achievement. Experience is indicating the relationship between conservation of vision and the fields of public health and education. Such relationships will be apparent in the accounting of activities for the year 1931.

### Preventing Eye Troubles in Babies

Blindness due to ophthalmia neonatorum in new admissions to schools for the blind was reduced from 9.2 per cent in 1930 to 7.5 per cent in 1931. In 1907 there were 28 per cent blind from this cause alone. Thus, over a period of twenty-four years, a reduction of 73.4 per cent has occurred in the incidence of ophthalmia neonatorum, one of the most serious causes of blindness.

The most potent agent in the reduction of this disease has been the increased use of prophylactic drops in the eyes of newborn infants. Because of reports from various sources that silver nitrate used as a prophylactic in the eyes of babies at birth was not always reliable, the National Society, in co-operation with the State and Provincial Health Authorities of North America, has begun a study to determine: (1) Changes taking place in silver nitrate, stored in both glass and wax containers over varying periods of time; (2) effect of light and darkness upon changes in the solution; and (3) chemical effect of container, whether beeswax or paraffin, upon the stability of the solution. Thus far it has been found that beeswax containers have a chemical reaction with silver nitrate, and investigation is being made to find a container that will not change the chemistry of the solution, after which recommendations may be made for

the manufacture, storage, and distribution of silver nitrate of unquestioned quality and purity.

Syphilis as a cause of blindness at any age is recognized, and the Society emphasizes the necessity of prenatal care and treatment in order to prevent blindness or defective vision through this cause. In this phase of its campaign it co-ordinates with the activities of the American Social Hygiene Association.

### **Caring for the Eyes of Preschool Children**

As a result of the National Society's study of the eyes of preschool children, doctors and educators are increasingly urging that vision be tested before school days begin so that the child has a fair start. A practical application of this principle was made when a representative of the National Society assisted the prevention of blindness department of the Pennsylvania State Council for the Blind in testing the vision of 8,000 children. In one city alone, of 1,848 children examined (mostly between the ages of four and seven), 473, approximately 26 per cent, were considered to have sufficiently serious eye difficulty to warrant ophthalmological examination; 200 others were recommended for reinspection. The importance of preschool vision testing is no longer questioned.

During the year, 103 demonstrations of vision testing were given before 6,789 school and public health nurses, teachers, doctors, and social workers, in nine states and 42 cities. The National Society undertakes demonstrations for vision testing primarily to stimulate an interest locally in the subject so that communities may be qualified to undertake the responsibility of preschool vision testing for themselves. In order to determine the efficacy of the preschool vision testing demonstrations undertaken in the past few years by the Society, an inquiry was recently sent to 3,100 nursing organizations. Of 1,681 who answered the questionnaire, about 40 per cent were testing vision in the kindergartens and primary grades.

### **Eye Accidents in Childhood**

At the instigation of representatives of the medical profession who had noticed a frequency of preventable accidents in childhood through the use of carelessly selected playthings, the National Society undertook a study of eye accidents in childhood. A summary was made of the eye casualties reported in the newspapers of the

entire country during the months of June, July, and August. In the city of New York a separate inquiry was made of special eye hospitals and of general hospitals having large eye departments regarding cases coming under treatment during the same period. The latter check-up served somewhat as a test of the completeness of the newspaper reports. To the governors of all states, to the mayors of cities with a population of 50,000 or more, and to the executives of local safety councils, the Society addressed a request for information concerning the legal provisions for prohibiting or regulating the sale or use of air rifles or similar devices.

The estimated annual total of cases noted in the newspapers, based on three months' experience, shows from 750 to 1,000 accidents. The estimated distribution of children's eye accidents, by causes, was: weapons, 31 per cent; fireworks, 23 per cent; explosives, 10 per cent; sharp-pointed objects, 11 per cent; flying particles, 8 per cent; games and sports, 5 per cent; automobile accidents, 3.5 per cent; falls, 3 per cent; burns from chemicals or hot objects, 2 per cent; and other causes, 3.5 per cent.

Of 183 cities with a population of 50,000 or more, 134 replied. Of these, 76 per cent have some regulatory provisions covering one or more articles in the weapon group. However, this must be largely discounted because there are so few cities in which the regulations are either specific or broad enough to cover all types of weapons which are causing eye accidents. In addition to improved legislation to prevent eye accidents in play, there is need for continued education of both children and adults concerning the eye hazards that are inherent in many objects which children commonly use in their play. In this campaign, the National Society continues to be actively engaged.

### **Conserving the Sight of School Children**

An outstanding project, undertaken during the past year in co-operation with the department of education of Columbia University, is a study to determine what effect reading actually has on the eyes—whether there is such a thing as a saturation point beyond which the eye suffers, no matter how ideal the factors of lighting or good sight are. The importance of the results of this study, especially to school children, cannot be overemphasized.

Further activity in the interest of the eyesight of school children has been the National Society's participation in the revision of the Code for Lighting School Buildings. A representative of the Society is an active member of the committee especially selected by the Illuminating Engineering Society to determine and set up lighting standards in schools. A preliminary revision of the Code is already in print and the final report is expected shortly.

Sight-saving classes, especially designed for children with such seriously defective vision that they cannot attend the regular classes, continue to demand much of the National Society's attention. The growth in the number of classes, from year to year, is slow but steady. From the two which were begun almost simultaneously in 1913, the number has grown to 398 in 1931. It is estimated that more than 4,600 such classes are still needed to take care of all school children requiring this special kind of teaching. The demand for teachers has been so great that four summer session courses were given, through the co-operation of the Society, at the following places: Columbia University, New York City; State Teachers College, Buffalo, N. Y.; Tulane University, New Orleans, La.; and the University of Chicago. In a number of instances the Society was consulted in the placing of teachers and supervisors of sight-saving classes.

Activities in connection with the White House Conference on Child Health and Protection have been continued in 1931. The report of the section on Special Education is already in print. In this volume the National Society shares the responsibility for the section on the Partially Sighted. As a result of the Conference, local conferences are being held, and the National Society is called upon in planning and participating in those aspects concerned with the eyesight of children.

### **Conserving the Sight of the Worker**

"One hundred per cent eye protection in industry" has been an aim of the National Society in its program for conserving the sight of the worker. With this in mind, a self-appraisal form was drawn up with the assistance of a committee of eminent men in the field of industrial safety, which, if conscientiously applied, will result in securing 100 per cent eye safety in industry. Upon its appearance

in print, one state commissioner of compensation was so impressed with the possibilities of this program that he requested 10,000 of these pamphlets, at cost, to distribute among the industrial plants of that state. It is hoped that the results secured will serve as a basis for national application.

Continuing its policy of co-operation, the National Society participated with the Metropolitan Chapter of the American Society of Safety Engineers, the National Safety Council and other organizations in the planning of the Third Annual Greater New York Safety Conference, which will take place in February, 1932. Two staff members were appointed to two different committees in the arrangement of the conference, a part of which will be a special session on "The Eye—Its Relation to Safety," under the chairmanship of the managing director of the National Society for the Prevention of Blindness.

Of some import to this aspect of the work was the request for a representative of the Society to present a paper on "What is being Done to Protect the Eyes of Industrial Workers? And What More Needs to be Done?" before the joint meeting of the Section of Ophthalmology of the New York Academy of Medicine and the American College of Surgeons. The transcript of this paper appeared subsequently in a number of magazines having widely diversified circulation.

### **Research and Demonstration Projects**

In addition to the studies discussed in other sections of this report, the Society has during the year continued its studies along the lines enumerated below.

**Medical Social Eye Work.**—Under the supervision of a specially appointed committee on medical social eye work, a co-operative project was undertaken with the Massachusetts Eye and Ear Infirmary. This consisted of the training, in medical social eye work, of a limited number of medical social workers, on scholarship, in order that they may be placed in different communities to demonstrate the increased efficiency of eye clinics with the addition of such trained personnel. An experimental first course has already been given at the Massachusetts Eye and Ear Infirmary and several workers have been placed by request in strategic localities. Suffi-



cient encouragement resulted to justify continuance of this project in the form of a second course for training another group.

The Society's co-operation with the medical social service section of the Welfare Council of New York City and the Associated Out-Patient Clinics included the completion of the series of study conferences on various eye conditions. So useful have the notes of the meetings been found that a mimeographed report of them has been made available; and some of the discussions, especially by doctors, have been published in various magazines and reprinted for distribution.

The Committee of Medical Social Eye Workers, which was organized in June, 1930, has, in accordance with its plans, published its bulletin semi-annually in May and November, 1931, presenting topics of particular interest to the group.

**Glaucoma.**—The Massachusetts Eye and Ear Infirmary is carrying on its study to determine the effect of adequate follow-up in connection with glaucoma patients, made possible through the co-operation of the National Society. The latest report available indicates a continued high registration of glaucoma patients, due, it is felt, to the efforts of the special medical social worker provided to handle and follow up glaucoma cases.

**Causes of Blindness Study.**—In an effort to ascertain definite information on the incidence and causes of blindness, the National Society is co-operating through membership in a committee on central statistics of the blind. This committee includes in its membership representatives of organizations working with the blind and for prevention of blindness, as well as members of the medical profession, social workers and statisticians. Tentative forms have already been set up with the hope of planning procedures whereby fundamental statistical data may be obtained regarding the blind which will be comparable throughout the country and which will serve the needs of all groups.

### Public Education

Among the most important projects of the National Society are its public education activities, which include: Lecture and letter service; the preparation and distribution of literature; provision of exhibit material, films and slides; and publicity service.



In order to have some idea of the demands made on the Society for information, one need only consider that during the past year alone 24,000 letters were sent in answer to inquiries and in giving necessary information on conservation of vision. Staff members have visited 23 states and Canada, and have spoken in 62 cities. In addition to eleven radio talks given, many thousands of people were reached in 290 lectures given by representatives of the National Society throughout the year.

The publication of the new quarterly, *THE SIGHT-SAVING REVIEW*, has met with acceptance from a wide circle of readers and approval from the press. It has a limited, paid subscription list. The *News Letter*, hitherto published five times a year, was issued but once. Almost a quarter of a million pieces of literature were distributed. More than \$2,600 was received in payment for publications sold in quantities, at cost, showing a definite and serious interest in the literature. Thirty-two new reprints were published during the year, largely from *THE SIGHT-SAVING REVIEW*.

The National Society conducted an aggressive but discriminating publicity campaign through which it sought to acquaint the public at large, and certain special groups, with the main causes of blindness and the best known means for their elimination. Newspapers, magazines, trade journals, and many other types of periodicals co-operated during the past year in this endeavor.

As usual, the Society was called upon to provide exhibit material, films and slides, for many community conferences and meetings. Twenty-eight exhibits were requested; and 24 sets of slides were borrowed. The films distributed by the National Society, "Through Life's Windows" and "Preventing Blindness and Saving Sight," were loaned on request 32 times during the year. That does not in any way indicate the number of showings, however, as in one instance alone the moving picture was exhibited 12 times. Much favorable comment has been received on the latter film, which is the newest on the subject.

## The Evolution of the Cataract Operation\*

William Campbell Posey, M. D.

THE author traces the steady increase in knowledge regarding cataracts since the operations of Dr. Jacques Daviel, the French surgeon who pioneered in this field 180 years ago

THE average layman believes cataract to be the disfiguring opacity observable upon the eyes of some with poor vision. He has the idea that cataracts grow upon the eyeball like a kind of skin, and slowly cover the sight like a curtain. Cataracts, however, are found not upon the eyeball, but within the globe; they consist of an opacification of the crystalline lens—that structure which, when clear, enables rays of light to be brought to a focus upon the retina. Once an opacification of this structure occurs, light rays are excluded and vision is impaired.

To the casual observer, the eye blind from cataract presents nothing abnormal in its appearance; the opaque lens, being situated within the eye and behind the pupil, requires closer inspection for its detection. The term "cataract" was given this condition in ancient times by those who thought that the opaque area which blocked the pupil was due to some substance which, cataract-like, had poured down from the posterior part of the eye and covered the pupil.

Many have been the attempts through the centuries to rid the eye of cataracts. All kinds of medication have been essayed—electricity, trituration of the globe with various agents, massage, as well as the administration of drugs internally. All have failed, and it is common knowledge that surgical intervention alone can rid the eye of cataract and permit the passage of light rays into the eye.

\* Presented at the Annual Meeting of the National Society for the Prevention of Blindness, November 19, 1931.

In early years native practitioners, the earliest surgeons, found that sight could often be restored by inserting a needle-like instrument into the eye and, by pushing the opacity backward, clear the pupil. While in some instances the restoration of sight following this procedure was lasting, in most cases the lens which had been severed from its attachment too often acted as an irritant and occasioned inflammation in neighboring ocular structures which subsequently destroyed the organ. This method of restoring sight, termed "couching," was the only one employed until the 18th century. By that time surgical methods had improved and the knowledge of anatomy had been greatly extended by means of dissection.

#### **First Lens Extraction by Jacques Daviel**

The first figure to arise in the history of operative ophthalmology was that of Jacques Daviel, a French surgeon who relinquished the crude and uncertain method of couching and actually removed the opaque lens from the eye by cutting into the globe and removing the cataract. In a brilliant communication addressed to the profession in 1752, Daviel reported a series of cases in which cataracts had been permanently cured by his method, a great gain over couching. This was a tremendous step in surgery, and to Daviel must be given the honor of the discovery and invention of the modern method of the removal of cataract by "extraction," for while the technique of the procedure has undergone many variations and has been greatly improved, the essentials of the method proposed by him remain. Following Daviel's lead, other surgeons employed his method with modifications, some good, some bad, but all devised by clever surgeons in an effort to obtain the best results possible and to perfect the extraction method. Many employed knives of their own device to make the incision into the eyeball. One authority, writing in 1821, computed that there had been 69 different knife models in use up to that time. Various, too, were the methods employed by different operators in meeting various complications encountered while operating. The literature abounds with their communications.

Efforts to render the cataract operation more successful were not confined to one land—French, German, Austrian, English and

Italian surgeons were all busily engaged. Though many still adhered to the couching method as simpler and safer, a number of surgeons from our own land, notably from New York, Boston and Philadelphia, were removing cataracts from the eye by extraction during the early part of the 19th century. The eye surgeons of these three cities were chiefly under British influence and had been trained in London and Edinburgh. Thus, the three oldest hospitals devoted to diseases of the eye which have persisted—the New York Eye and Ear founded in 1821, the Massachusetts Eye and Ear in 1824, and the Wills Eye Hospital in Philadelphia in 1832—were established through British influence. The two former were established by men who had received their ophthalmic training in Moorfields Hospital, London, established in 1805, while the Wills Eye Hospital was established indirectly by men who had been pupils of Physick, the professor of surgery in the University of Pennsylvania, who had been educated in ophthalmic as well as general surgery in London and Edinburgh. This famous surgeon, acclaimed “the Father of American Surgery,” must be credited with implanting the love of ophthalmology into two of his earliest students, Elisha North of Connecticut and George Frick of Baltimore. His influence caused each to establish an Infirmary devoted to the treatment of diseases of the eye, the former in New London in 1817 and the latter in Baltimore in 1823. Both of these institutions, however, survived but a short time. The creation of five separate infirmaries, at the same period, 100 years ago, in as many different American cities, indicates America's early activity in treating ocular diseases.

### Needling

Another and much practised method 100 years ago of ridding the eye of cataract, in addition to couching and extraction, was by “needling.” It had long been remarked that, if the delicate structure which normally covers the lens, the capsule so called, was injured, and the fluids within the eye permitted to have access into the lens structure, the substance comprising the lens gradually melted away. This had long been common knowledge after injuries involving the lens. In young subjects in whom the lens is soft the needling method was often successful and is still in general

use. But in adult life the lens hardens and the intra-ocular fluids no longer have the power of causing its rapid absorption, so that this method was gradually abolished in adults and gave way to extraction.

### **Incision into the Globe by von Graefe**

Despite the general excellence of the extraction method and the improvement wrought in the operation since its discovery by Daviel, it was far from perfect. Many eyes were lost though operated upon by surgeons of the greatest skill. Often the incisions which were made in the eyeball to permit the removal of the cataract did not heal. To prevent this, many were the deviations from the incision first practised by Daviel and, as we have seen, many knives of different shapes were invented to make the cut into the eyeball. But all were to no avail. Then, in the middle of the last century, just about a hundred years after Daviel's discovery, a second figure appeared in the ophthalmic world in the person of Albrecht von Graefe. Graefe was a man of transcendental genius who completely transformed the practice of ophthalmology and was the means of saving the sight of countless thousands. This remarkable man, the son of a great surgeon, was born in Berlin in 1828, of a noble family. Educated in his native city, he came by chance under the influence of Arlt, one of the most noted ophthalmic surgeons of his time. Arlt was professor of ophthalmology in Prague, where von Graefe went to perfect himself in general medicine and surgery. Of humble birth, but of fine character, Arlt was of such excellence as a surgeon that Graefe became much impressed by him, and through his influence, turned toward ophthalmology.

Fortunate was the chance, indeed, which brought these two men together and fortunate was the circumstance that at this time there were other great minds devoting themselves to ophthalmology. The period has well been called the "Golden Age of Ophthalmology." It saw the discovery, by von Helmholtz, of the ophthalmoscope, that wonderful instrument by which the physician is enabled to look into the eye and to study changes, both physiological and morbid, which occur there as well as elsewhere in the body. Donders, a Dutchman, was elucidating the problems of the refraction of the eye dealing with the theory and practice of measurement

for glasses. The great English surgeon, Bowman, lived at that time also. These men of different nationalities were all friends, and all conferred together. There were no jealousies or international differences to separate them. All were united in their interest in ophthalmology and their desire to help humanity.

This paper has to deal with cataract and must be confined to that subject, but before describing the revolution wrought by Graefe in that operation, attention must be called to what the world owes him by his discovery of the curative effects of iridectomy in glaucoma. Prior to 1854 glaucoma, or hardening of the eyeball, as the layman knows it, meant blindness. Graefe, by the operation, which he devised and practised, showed that glaucoma was often curable. This was one of the outstanding discoveries in surgical science. His great contribution to the cataract operation was the incision into the globe he devised and the knife with which he made it. Both, the products of long study and based upon precise mathematical calculation, enable the surgeon to remove cataract from the eye through the smallest incision possible, thereby facilitating prompt healing of the wound by the perfect coaptation of the lips of the wound. This operation, eighty years after its discovery, is still that of choice of most operators the world over.

Naturally enough, surgeons from all parts of the world flocked to Europe to see him and learn his methods. Veritable pilgrimages were made to Berlin and many from our own land visited Graefe's clinic as well as the laboratories of Helmholtz and Donders. Graefe died all too young, in 1870. There seems to have been no subject in ophthalmology with which he was not familiar, none concerning which he failed to record his written opinion. Investigator, author, surgeon and clinician, he earned universal homage.

#### **Removal of Lens in Its Capsule by Pagenstecher Brothers**

When speaking of the needling operation, mention was made of the capsule of the lens, a delicate membrane which encloses this structure and which remains in the eye after the cataract is removed. This frequently necessitates a second operation, for in cataracts it too is opaque and often partially blocks the pupil after the main body of the lens has been removed. It often acts as an irritating as well as a mechanical factor to mar the success of the operation.

In the latter half of the last century the endeavors of some surgeons were directed toward perfecting a procedure which would enable the lens to be removed in its capsule. By this time, anesthesia had been introduced, the freedom from pain afforded the patient enabling the operator to perform the delicate steps of the procedure with greater freedom and precision than was the case in pre-anesthetic days. The blessing of antisepsis, also introduced at this time, greatly lessened the risk of infection. Though the operation of the removal of the lens in its capsule had been essayed a century before, it remained for the brothers Pagenstecher, of Weisbaden, to devise and perfect a method with which they had great success.

Conservative surgeons were chary of the procedure, for it was often attended with loss of the vitreous humor, a semifluid structure filling the posterior part of the eye and necessary to its conservation. The method became popular, however, in India, where the vast number of cases at the command of the surgeons enabled them to obtain a skill in operating not possible with a more limited number of patients. Thus, at the commencement of the present century, there emerged a British surgeon who had long been a resident in India. This surgeon, Col. Henry Smith, devised a method of his own for removal of the lens in the capsule and reported an overwhelming number of cases upon which he had operated with gratifying success. Particularly kind and gracious to our countrymen, Col. Smith invited many to visit him at his clinic at Amritsar and afforded them the opportunity of operating, under his direction, upon a large number of cases. Later on, Smith came to this country and demonstrated his method. But, despite his unusual skill and the excellence of his demonstration, the procedure seemed to be attended with too much risk of vitreous loss to become popular. There is much to commend in the removal of the lens in its capsule, however; and a modification of Smith's method, recently devised by Arnold Knapp of New York, gives promise of greater safety and better ultimate results.

#### **Removal of Lens by Suction**

Another method of removing the lens in toto is practised by Barraquer of Barcelona, who removes the lens within its capsule by



suction. A cleverly constructed apparatus furnishes the suction, and, after the customary incision has been made into the eye, a delicate spoon-shaped instrument attached to this apparatus is inserted through the cut and the lens carefully withdrawn. The operation demands a great deal of skill in the use of the apparatus. Otherwise the iris as well as other important parts of the eye may be caught in the suction and the eye lost.

The last word has yet to be said regarding the cataract operation. Many surgeons the world over are striving to perfect the removal of the lens and to lessen the losses from the operation. The speaker wonders if the lay world appreciates what that means. Does it realize through what a long course of training the eye surgeon passes before he is qualified to practise? Most medical schools of high type demand a college degree before a student takes up the study of medicine. Then come four years of hard study in all branches of medicine and surgery, followed by at least a year of hospital internship, during which the young doctor studies and treats disease in all its phases. This done, he must devote two more years to the study of the eye and its diseases before he can be qualified as an ophthalmic surgeon—a long and costly apprenticeship for our young surgeon. If he would operate, he must be sober and righteous, he must eschew all habits which might tend to impair his nerve or the delicacy of his touch.

Sometimes the operation is unsuccessful through no fault of the surgeon. Consider the nature of the organ upon which he is called to operate. As part of the general organism it is subject to the diseases of the body, and a skilfully performed operation may have its result marred by an inflammation coming from some other part of the body which the surgeon is unable to control. Again, a reasonable period of rest and quiet is essential after a cataract operation. Some patients are so habituated that the surgeon finds it difficult to obtain proper relaxation upon the part of the patient, and the success of the operation is again marred. Skilful nursing is, of course, an essential part of the cataract operation.

When performed by carefully trained and skilled surgeons the removal of cataract is now almost universally successful, the best surgeons obtaining useful vision in more than 95 per cent of their cases—a great advance over the results Daviel obtained 175 years ago when this field of eye surgery was first begun.



## What Canada Sees

Mary C. McLelland

THIS is another in the series of articles we are publishing to show how the various states of the Union and Canada are meeting the responsibility to guard the eyesight of their citizens

**T**HOUGH Canada is not exactly a "wild and frozen region to the North," which an American ambassador once humorously insisted was the opinion of his countrymen, yet it still labors under the handicap of a wide expanse settled by a comparatively small population. This population of over 10,000,000 is spread over 3,750,000 square miles. In the maritime provinces, New Brunswick, Nova Scotia, and Prince Edward Island, it is fairly evenly distributed, from one end of each province to the other. Ontario and Quebec have between them well over half the people in Canada. Enormous patches of territory to the north receive only scattered pioneers or are uninhabited. We are not surprised then to realize that Canada has no city which has reached the 1,000,000 mark in size, only two cities are over 500,000, only seven over 100,000 and only 15 altogether over 60,000. In fact, three-fifths of Canada's people are not found even in towns, and can therefore only be called rural.

### Difficulty of Health Supervision in Canada

These statistics are significant when we consider general health supervision. It will be seen at once what a complicated problem it is for a Provincial Department of Health to extend any kind of a regular health service through a province, or any service at all in some of the outlying districts. Only three of the provinces, British Columbia, Manitoba, and New Brunswick, are able to provide a complete yearly medical inspection of all school children; two others manage a complete inspection periodically; the other four

can concentrate only on the larger centers, with occasional excursions into the interior. Defective vision is not always classed separately. Sometimes it is omitted in the physical examination, the eyes being tested only at the beginning and near the end of public school life. Sometimes only children who are obviously suffering from an eye defect are referred to the nurse or doctor for examination. It is exceedingly difficult, therefore, to determine accurately the extent of the need for conservation of vision in Canada, to obtain statistics on the amount of defective vision in various provinces, or to locate serious cases in rural areas. In addition, it is a costly undertaking to arrange for transportation and treatment across the long distances, when it is felt necessary, even supposing the financial position of the family can be correctly ascertained.

#### **Responsibilities of the Canadian National Institute for the Blind**

The Canadian National Institute for the Blind, which conducts a prevention program, was founded in 1918 to serve the war and civilian blind. Later it amalgamated with local agencies working for this purpose, establishing headquarters in Toronto, and various branches throughout Canada. It is a private philanthropic organization, receiving a grant from the Federal Government for national administration; for the varied services it renders in provincial areas it receives approximately 50 per cent from the Provincial Governments, plus special donations; and the remainder from the general public. Its activities in the field of prevention may be said to be the only dominion-wide organized effort of this kind, outside of the routine work of dominion and provincial departments of health. While the Institute has tried to adhere to a general rule of providing treatment for cases of 20/70 or less (before correction), where the family cannot pay and no other organization can be found to assist, it is forced to exercise considerable latitude in carrying out the prevention part of its program because of cases in rural areas where an accurate test is impossible, and where they must be brought to a center before correct visual acuity can be determined. Furthermore, it assists any urgent case, such as progressive myopia, squint, etc., of any degree of vision, when necessary.

### **Prevention of Ophthalmia Neonatorum**

It may be interesting to note how Canada stands in regard to the laws and practices which particularly affect vision, and where the Institute can give service. A statute has been passed by the Dominion Council of Health on the recommendation of the Provincial Health Officers that drops of silver nitrate (provided free by the Provincial Board of Health) or any other approved preparation, shall be used in the eyes of every infant at birth, and that cases of ophthalmia neonatorum must be reported as soon as noticed. This has actually been put into law in only six of the nine provinces as yet. Four provinces use a physician's notice of birth which contains a question asking if drops have been used, and two more are expected to follow shortly. There remains but one province, therefore, without either the law or the question. Even where no law exists regarding the use of prophylactic drops, the practice is, of course, strictly observed in all hospitals, taken for granted only in private homes. The Institute for the Blind and the Canadian Council on Child Welfare press continually for both the law and the question. The incidence of known ophthalmia neonatorum in the present health reports is very small, but as the health supervision is covering more and more area each year, and as some of the laws are scarcely old enough to affect the statistics of causes of blindness of new pupils entering the schools for the blind, there is no useful information available up to date as to the decrease of this affliction.

### **Facilities for Eye Treatment**

In the matter of facilities for eye cases, Canada has, to begin with, only about 300 eye specialists (including those who are also qualified for ear, nose, and throat), fully two-thirds of this number being located in twelve major cities through the country. There are obviously long distances to send a patient to the nearest oculist, and although a municipality is generally supposed to pay for its needy people, in increasingly numerous instances, especially with present conditions, it is unable to do so. When a patient with a bad eye is reported to the Institute from any municipality, the Institute first gets in touch with the local civic authorities or a charitable organization to see if the necessary money can be provided, and to verify the financial state of the family. Sometimes

the nearest board of health will assume the obligation, but if no one is found, the nearest branch of the Institute takes care of him. When a letter comes in from a rural district or distant point, the Institute is able to make investigations frequently through the local public health nurse, Red Cross, Victorian Order of Nurses, women's institutes, provincial police, or wherever it has co-operative arrangements. If no financial assistance is forthcoming, the Institute arranges for the client to be brought to a center, and takes advantage of any free privileges which are offered. Sometimes the Provincial Department of Health supplies railway transportation. Free clinics and hospital beds at low rates can be counted upon in the larger cities. Where there is no clinic, sometimes the oculist gives his services free. Glasses can generally be secured for a moderate sum through specified companies with whom the Institute deals. In many cities a school child is cared for by the school board, which receives a special grant from the local board of health, and makes its own arrangements for treatment and glasses, often supplying the latter if parents cannot pay. Certain organizations definitely include assistance of this kind in their programs. Much service has been rendered through the Junior Red Cross, Lions' and Gyro clubs, special chapters of the Imperial Order of the Daughters of the Empire, women's institutes, and the many women's auxiliaries to the Canadian National Institute for the Blind. Among the problems encountered by the Institute are the father who is unwilling to bother with Mary's eyes, for "her mother was just like that at her age, and has got along all right"; and with Mary herself, who decides that glasses do not enhance her facial allurements, and therefore refuses to consider their expediency. Again, there is the rollicking Charlie who breaks his glasses frequently. The discouraged mother brings him to the Institute, which wonders whether additional expense is justified. Certain teachers are considering allowing a child to leave his glasses at school at the end of the day, there being little or no homework in most of the lower grades, feeling that the good glasses do when used regularly during school hours offsets any harm which might follow their abandonment the rest of the day. Because of the nature of these indispensable "prosthetic appliances," efforts to aid or preserve the eyesight are too often unavailing.

### **Eyesight of Canadian School Children**

The Institute has tried to gather what statistics it can find, through the aid of local and provincial departments of health, on the percentage of children with defective vision. This seems to vary all the way from 8 per cent to 20 per cent, usually nearer the 8 per cent mark. These figures generally refer to children singled out by teachers as showing signs of eyestrain in the classroom and examined with the vision test chart by the school nurse or doctor. Of course, if an oculist could examine all the children there would probably be a marked increase in this number. In one fairly representative city, the elementary school children show 11 per cent with defective vision, and high schools, 15 per cent. The normal schools questioned go as high as  $33\frac{1}{3}$  per cent. One nurse asked the entrance class how many wore glasses or had ever worn them, and fully half held up their hands. In towns where there is no regular school survey, the Institute approaches Lions' or Gyro clubs stressing the need, and if the club desires to take up the matter, it makes arrangements through the local school board, or, as in Ontario, sends through the local school board a request to the Provincial Department of Education which provides a doctor free for the purpose. The club arranges for glasses or treatment when the family cannot pay, with the exception of those who have below 20/70 vision, in which instance the Institute can be called upon to assist. The Institute hopes in the near future to make arrangements with certain oculists, in one of the provinces at least, whereby all rural cases may be brought at intervals into specified centers, not ordinarily served by oculists, and receive the necessary treatment.

### **Sight-Saving Classes**

In cities where all the children have been tested with the vision test chart by nurse or doctor, for the purposes of entering a sight-saving class, those selected having been re-examined by an oculist, the Institute finds that the ratio of those between 20/70 and 20/200 in the better eye after correction, averages one in every 700. On that basis, therefore, it has calculated that an elementary school population would have to reach somewhere between 8,000 and 10,000 before sufficient children would be forthcoming to prove

to a school board the practicability of establishing a sight-saving class. A city with an elementary enrollment of this size would be itself in the neighborhood of 60,000 people. As pointed out before, there are only 15 cities in Canada approximating this size. Two of these have three times as many French children as English, and in the majority there are two school boards, Roman Catholic and Protestant, each in charge of its own schools. This divides the school population again as far as requisite numbers for sight-saving classes are concerned. There are as yet no sight-saving classes in Canada under a Roman Catholic School Board, although some Roman Catholic children attend Protestant sight-saving classes by special arrangement.

Canada has, however, succeeded in opening fifteen sight-saving classes, located from east to west: in Nova Scotia—Halifax, one; in Quebec—Montreal, one; in Ontario—Toronto, five, Ottawa, one, Hamilton, one, London, one; in Manitoba—Winnipeg, two; in Alberta—Edmonton, one, Calgary, one; and in British Columbia—Vancouver, one. Canada is indebted for the inauguration of her first class to the generosity of the Massachusetts Relief Commission, which alleviated the suffering of the people of Halifax following the explosion of a French munition ship in the harbor in December, 1917. Four of the 15 classes have been established in the last year and a half. Of the five cities not represented, two have only a small English-speaking Protestant school population; the other three have conducted a special survey for the purpose of establishing a sight-saving class but are not as yet able to start one. There is no course in Canada for training sight-saving class teachers, although a short course was held a few years ago. Some of those now teaching took this course; others took advantage of the courses offered in the United States; others observed in the classes in progress here, hoping to take a course at a later date. In some centers the local board of education pays for this training and, where it is unable or unwilling to do so, only the more enthusiastic teachers can find the time and means to do so themselves, as the initial cost of the railway fare is expensive. In special cases the Institute assists teachers in this respect. It is expected, however, that a sight-saving class training course will be held in Ontario next summer, if sufficient apply to make it worth while.

The children themselves have proved very happy in sight-saving classes, and it has not been difficult, on the whole, to persuade parents to agree to this special education. The teachers in the regular grades have been most co-operative as regards admitting extra pupils to their regular lessons for oral work. High school work in sight-saving classes is taught only in Toronto and Winnipeg. Winnipeg is the only city which makes use of buses to convey sight-saving class children, but other auxiliary class children are collected at the same time. Where children go by street car, tickets are sometimes provided through the local board of health. In Montreal, where the distances are great, and the Protestant schools number only one-fifth of the Roman Catholic schools, most of which are French, and are scattered from end to end, the question of transportation diagonally across the city from homes far apart is baffling. The expense and time involved in transportation alone hinder the formation of additional classes everywhere. Where a Provincial Department of Education has not extended its grant to include sight-saving classes, the local board also hesitates to take the responsibility. The Canadian National Institute for the Blind seeks to promote these classes by interesting health and educational authorities in their advantages and necessity, assisting where necessary with the survey, or facilitating the establishment by enlisting the co-operation of oculists and influential citizens, and by publicity through local organizations. It has to recognize, of course, that in all prevention work the education of the general public is a necessary corollary and, in fact, very often a necessary forerunner of a definite provision by educational and health authorities. It also supplies literature on the organization and administration of the classes, lists and cost of equipment, etc.

### **Canadian Large Type Books**

Most of the equipment for sight-saving classes may be purchased in Canada, with the exception of large type books. These are bought from the United States—a few, in slightly smaller type, from England. A movement is now on foot for these books to be published in Canada, which will reduce the cost and provide material from Canadian texts. A list of the variety of books required



and the estimated number of children in each province who would stand in need of books of this kind were submitted by the Institute to each Provincial Department of Education, with the estimated cost of the books to the province. The Institute is eager for these books to be published in sufficient quantity that they may be available to all children with badly defective vision—not just to those in the vicinity of a sight-saving class. At present, school books used in Canada vary with each province, but most of the deputy ministers of education expressed themselves as being willing to authorize the use of any books drawn up for this purpose, published in large type. A committee has been appointed by the deputy ministers to consider this matter when the new Western reader is published, which is expected to be the most universally used edition in Canada.

#### **Conservation of Vision Literature and Public Information**

The Institute has had opportunity, within the last two years, to assemble and publish a series of prevention pamphlets in answer to typical questions received from all over Canada. These pamphlets deal with general care of the eyes; signs suggesting eyestrain; good lighting; sight-saving classes; play accidents, etc. Since the first issue in May, 1930, about 175,000 pamphlets, 6,000 posters, and 3,000 vision test charts have been printed. This material has been carefully distributed through the much appreciated assistance of provincial and local departments of health, normal schools, Home and School clubs, Council on Child Welfare, etc. Two slide films of approximately 80 pictures each, and two shorter films of 35 pictures, have been prepared to illustrate various aspects of eye care. The poster is in the form of a rhyme sheet, and the eye chart combines letters, numbers and pictures to meet the requirements of foreigners and young children, although an ordinary school child can use all of each line. The literature is distributed free. Periodic visits are made to the publicity departments of the Provincial Departments of Health and other interested organizations for consultation as to the most effective means of public education in connection with eyes, and what type of material could be used by them if prepared by the Institute.

By permission of almost all the deputy ministers of education,



the Institute has had the privilege of visiting normal schools, summer schools and university departments of education, for the purpose of giving an illustrated lecture on care of the eyes, and placing at the students' disposal the pamphlets, posters, and eye chart. There are twenty-three English normal schools and at least sixteen French schools in Canada. This privilege has been much appreciated by the Institute, as the normal school program is generally so full that outside lecturers are not encouraged. The nurses who are on the staff of certain of the schools are most co-operative in the furtherance of this work. As a large number of rural school houses are without medical inspection, and some only infrequently visited, and as a nurse often leaves the selection of children with defective vision to the teacher, the Institute hopes, through contact with the teaching profession, to impress upon teachers the importance of early discovery of a child whose eyes may need attention. Arrangements have been made during the past year for copies of the film, which has been compiled to correspond to the normal school health program, to be made available through the branches of the Institute, to normal school nurses who will use it themselves in their work. Similar copies are also available for some of the Provincial Departments of Health for country fairs, etc. The films are also used in the many illustrated lectures given by the Institute to interested organizations.

### **Causes of Blindness**

With regard to special prevention of blindness activities in Canada, trachoma, which has been affecting small portions of the Indian and foreign population, mostly in the western provinces, is being handled very stringently by the Provincial Departments of Health. Immigration officials have been strictly watching for trachoma but these cases have been resident in Canada for some years. Oculists or nurses are sent out to make a preliminary survey; suspected cases are treated at regular clinics, and isolated, as far as possible. As one deputy minister remarked, "Owing to the severity of the treatment, the people themselves usually fail or neglect to carry it out regularly." There seem to be some hundreds of affected people, although the Institute has only 81 registered as blind from this cause. To control this disease among the Indians,

the Department of Indian Affairs has recently appointed an oculist who has made a special study of trachoma in Europe, to assist in organizing systematic and thorough treatment in the areas in which trachoma most frequently occurs. His work will be concentrated on the children, as it is exceedingly difficult to stamp out this disease among the adults because of their *laissez-faire* attitude and their lack of concern for hygiene on the Reserve.

The Industrial Accident Prevention Association is carrying on a forceful publicity through all industrial concerns, and accidents are decreasing yearly, but the Institute has been unable to obtain any figures definitely relating to eyes, as publicity of this kind is not approved by their organization.

The Social Hygiene Council is untiringly campaigning against venereal disease and its dire consequences both mental and physical. One-quarter, at least, of the cases of blindness registered with the Institute would seem to be attributable to this cause, directly or indirectly; but accurate information on this point is impossible because that cause of blindness is rarely stated as such.

From the Institute's records, the chief cause of blindness, aside from venereal disease, is cataract, which accounts for nearly another quarter; then accident from all causes, including industrial and play accidents, amounting to about one-sixth. Glaucoma and myopia come next at about one-twentieth, after which the causes are variously divided. In the three English schools for the blind receiving grants from the Provincial Governments the causes of blindness of incoming pupils vary considerably from year to year. The three main causes may be said to be venereal disease in some form; injury; and cataract. Considering the age of the new pupils, one of the reports makes rather an encouraging statement that of the twenty-three pupils entering that year, no case can be definitely traced to ophthalmia neonatorum, although there might be a suspicion in four instances.

### Summary

Although the Institute since its inception has always sponsored prevention of blindness work, it is only during the last few years that it has been able to concentrate on the educational and propaganda side of the work apart from the practical preventive surveys

and treatment. The responsibility for prevention work is divided among the national office and the five divisional offices across the country. The national office assumes the responsibility for the publication of all the pamphlets, posters, vision test charts, etc., which are supplied to the divisions for distribution and, in addition, carries out a comprehensive program of direct contact and campaign through agencies. The divisional offices develop the contacts made by the national office and improve conditions locally for effective distribution of publicity material, supplementary educational propaganda, and take care of the practical work of surveys, provision of glasses, treatment, etc., in their respective territories. In each division there is at least one capable representative responsible for the conduct of prevention work, combined, as it has to be, with executive or social service duties. The program is arranged mainly with the children in mind, since both the direct and indirect results are more effective. The direct benefits consist of the visible correction of eye defects at school; the indirect, of the interest taken by the parents in the child's welfare, their own eye condition, and that of others in the community. The Institute hopes in time to provide for all cases of defective vision, where the family cannot pay, until the departments of health become all embracing, so that an individual may know definitely where to appeal, instead of trying one agency after another, to his discouragement and abandonment of effort. It looks forward also to the time when there may be a dominion-wide systematic and routine examination and care of children's eyes, so that they will be safely and adequately equipped for their work. We must, however, perhaps appropriately, talk of this as "the vision of the future."

## Social Hygiene and the Prevention of Blindness

William F. Snow, M.D.

THE author discusses a subject which is common ground for the American Social Hygiene Association and the National Society for the Prevention of Blindness

ARTICLES such as this ought to start out by warning the reader that there is nothing new in them. Their value lies in repetition of facts and formulæ which need to be applied on an ever-increasing scale if we are to make constant progress in the prevention of blindness. Scientists have given us knowledge and physicians have shown us how to use it for conservation of sight; but both are helpless in extending the application of protective and preventive measures unless their efforts are supported by activities of such agencies as the National Society for the Prevention of Blindness which succeed in enlisting the interest of the public and arousing people to action. For this purpose a multiplicity of articles broadcasting the same facts in varied phrasing is justifiable and indeed necessary.

### What are "Social Hygiene" and "Prevention of Blindness"?

Of the two terms composing the title—"social hygiene," and "prevention of blindness"—probably the latter is the better understood. Yet the frequency with which the national organization is spoken of as the "Blindness Society" and described as dealing primarily with care for the blind, illustrates how much emphasis needs to be placed on popular understanding of the real meaning of prevention. As for social hygiene, it is not surprising that such an artificial term should require special explanation.\* For the

\* In the United States, social hygiene societies usually describe their objectives as follows: (1) To preserve and strengthen the family as the basic social unit; (2) To

present purpose the medical and public health aspects of social hygiene are pertinent, particularly as they relate to diseases caused by the syphilis organism and by the gonococcus. While the field of the American Social Hygiene Association is entirely distinct from and in many ways not at all related to that of the National Society for the Prevention of Blindness, these two agencies have a common ground in promoting early diagnosis, adequate treatment, and effective after-care of eyes invaded by these dangerous infections. Even more important is the team-work of these associations and their affiliates in informing and aiding the public to prevent the spread of these diseases.

### **Ophthalmia Neonatorum**

One of the most important and tragic of the diseases which these national agencies are jointly combating is scientifically known as ophthalmia neonatorum. This disease is an inflammation of the lining of the lids and other parts of a baby's eye, caused, in two-thirds or more of the cases, by the gonococcus. When the mother has gonorrhea this organism has, of course, a special opportunity to infect the eyes of her baby during birth. These facts explain why blindness at birth occurred in past centuries so frequently and was accepted as an inevitable birth infection until a generation ago. In 1884 the gonococcus was discovered by a scientist named Neisser and later identified as the cause of gonorrheal ophthalmia in newborn children. Then a famous physician named Credé found that a solution of silver nitrate, from one to two per cent, dropped cautiously into a baby's eyes, would not hurt the eyes but would kill the gonococcus and thus prevent the infection. This simple procedure has since been perfected, the preparation and distribution of approved solutions standardized, and laws and administrative measures worked out for requiring babies' eyes to be treated in this manner. Most of the states have now adopted such measures, and public opinion has approved the principle of disinfecting

promote educative measures concerning the relations of the racial instinct to the conditions of civilized society; (3) To emphasize the responsibility of the community and the individual for preserving or improving the quality of future generations by educative and social measures; (4) To further social customs which promote a high and equal standard of sex conduct in men and women; (5) To promote the prevention and treatment of venereal disease by appropriate educative, medical and social measures; (6) To repress commercialized vice; and (7) To co-operate with the various organizations interested in the above subjects with a view to co-ordinating efforts to secure these ends.

every baby's eyes in order to be certain that no eyes fail to receive this protection. At the same time, physicians and nurses wisely emphasize the fact that only a small proportion of all the babies born are likely to have "sore eyes," and that of these cases probably a third will be caused by other infections. When the facts are understood, parents very readily accept this precautionary legal requirement in the interest of public health. In twenty-four years, blindness due to this disease among the new admissions to United States schools for the blind has decreased 73.4 per cent; it now represents less than 7.5 per cent of the total admissions. Such data are indicative of the great advances made by official and voluntary forces in reducing the prevalence of this disease.

It must not be forgotten, however, that if this preventive treatment is not given or is not properly administered and fails, the ensuing infection is not necessarily limited to damaging the eyes. The baby is a sick baby and must be observed for possible extension of the disease and exposure of others. Also the mother should be viewed as a sick mother. Very often both the baby and the mother ought to be taken to a hospital; and always the nursing is a vitally important part of the treatment. The essential point for the layman to understand is that early and continuous treatment is likely to save the eyes, or at least to prevent the most serious and disfiguring results.

One of the encouraging developments of the past few years has been the incorporation of lectures on gonorrhea in post-graduate study and clinic work for physicians, and training courses for medical social service in eye clinics. The promotion of such opportunities for experience in the proper diagnosis, treatment and after-care of this disease, combined with special institutes for nurses and activities in popular education, is rapidly laying the foundation for much more effective work in combating disease than has been hitherto possible. When one recalls that probably two to three per cent of all blindness from birth is due to the gonococcus, and that another one per cent may be due to this form of infection of the eyes later in life, it is evident that the work is worth while. The latest Federal Census recorded 63,489 blind in the United States; but this figure gives no adequate idea of the extent of impaired vision due to this one cause, nor of the costs in money and

suffering during the active illness and in the long years of handicap that follow.

### **Eye Involvement in Syphilis**

The other disease in the so-called venereal disease group which causes much blindness or impairment of vision is syphilis. The form of eye involvement most frequently encountered is known as interstitial keratitis. It is a deep inflammation of the cornea, beginning with clouding of this transparent front part of the eye structure. The dullness increases, minute blood-vessels become visible, tears are profuse, light is disturbing, and the increasing salmon-red appearance is a final warning that the child should be taken to a physician without further delay.

From a medical point of view, syphilis of the eye is the reverse of gonorrhea of the eye. That is to say, in the latter the physician is dealing with an acute infection which he tries to prevent from spreading from the eye to any other part of the body; while in syphilis of the eye, the physician recognizes an attack upon this organ by a virulent disease already diffusely established in the body. This fact, coupled with the knowledge that the ophthalmologist's diagnosis of interstitial keratitis is often the first recognized evidence of syphilis, makes it most important that correct diagnoses of such eye conditions shall be determined. The source of infection in these cases is usually the mother; or rather infection of the child occurs during pregnancy. The child is born with good eyes and no symptoms in other parts of the body may be apparent. Usually after the fourth year, and generally before twenty, the conditions described manifest themselves. Then begins the battle to save the eyes from serious permanent damage. But the efforts of the ophthalmologist should be only a part of the whole medical struggle to rout syphilis from its entrenched position in the body of the child. Furthermore, the child should be the starting point of trained social service follow-up work to discover possible syphilitic infections in the father and mother and other children of the family.

### **Necessity for Prenatal Care of Mother**

Syphilis is so insidious in its attacks, so often lies dormant in the body many years, masquerades under so many symptoms of other



comparatively unimportant diseases, and seems to yield to such simple treatment only to reappear in savage attacks upon vital organs of the body, causing ruin and death, that many world authorities in medicine have called it the greatest killing and incapacitating communicable disease. Certainly it is often one of the most baffling diseases for the physician to diagnose, and requires long months of treatment and years of periodic observation to ensure control of its disease processes. The great ray of hope which shines through this tragic picture is based on the scientific discoveries which have been made or perfected in the past twenty-five years, leading to simple blood tests and other means of detecting early evidence of infection with syphilis even though there may be no clinical symptoms readily apparent. Building on these facts, physicians and health authorities have advocated blood examinations of every pregnant woman just as soon as possible after conception. Prompt treatment of the expectant mother for syphilis begun in the early months of pregnancy is important not only for her own sake and future happiness, but because the freedom of her baby from the disease can be assured almost without any reservation. On the other hand, failure to discover and treat this disease is responsible for a very large proportion of miscarriages and early deaths of infants and children before any of the eye conditions appear.

#### **Co-operation of Ophthalmologist with General Practitioner**

Thus it is clear that the ophthalmologist, the general physician, the trained nurse, the medical-social worker, the observant father and mother, and all the public health and school department personnel dealing with health examinations and care of children are challenged to unite in a great allied army of workers, on the lookout for evidences of syphilis, and insistent upon public understanding and support of the movement for eradication of syphilis. An added ray of hope for those particularly interested in sight conservation and the prevention of blindness is found in the probability that even after efforts have failed to prevent infection, early detection of eye symptoms of syphilis will generally enable the eye physician to ward off severe permanent impairment of one or both eyes, even though his efforts alone cannot save the patient from



further progress of the disease in other parts of the body in later years. From the practical point of view of economic family and community life this is most important.

### **Other Eye Involvements of Syphilis**

Interstitial keratitis has been selected for reference from among a long list of disturbances or pathological changes in the eye mechanism, because the cornea is of outstanding importance to vision and its impairment can be controlled with such very great benefit to the infected individuals and to society. A mere list of the scientific names doctors give some of the other structures showing ocular manifestations of syphilis is impressive: the iris, ciliary body, choroid, retina, optic nerve, motor nerves. Of course, most of us happily live our lives in ignorance of any such inventory of the structure of a single organ, which we never miss until it is gone or seriously threatened. It is well that we should know the general structures and functions of the body, however, and be informed upon the things to do when any part of the body may be or has been exposed to possible danger and damage. Perhaps the most useful function of voluntary agencies for prevention of blindness and for social hygiene lies in the direction of co-operating with other agencies in calling our attention tactfully but persistently to the matter and method of educating ourselves on this point. So far as syphilis is concerned, the probability that fifteen per cent of all blindness in the United States is caused by it and that a much larger percentage of people are struggling through life with impaired vision because of it, provides ample grounds for making common war on this disease.

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Those who have read to this point, and who have the patience and interest to continue, may contribute greatly both to the movement against blindness and to related activities in the field of social hygiene by commenting upon and interesting themselves in local and national efforts indicated in the remaining sections of this article.

### **Co-operative Medical Social Work**

The limitations of space preclude discussion of many important activities and interesting details relating to joint activities and

co-operative projects of the national organizations mentioned. For example, the joint sessions of these agencies on the "Relation of Venereal Diseases to Vision Impairment" and "Venereal Disease Control"\* have exerted a wide influence upon public understanding. The inclusion of leaflets on ocular syphilis and on gonorrhea in the "Information for the Patient" series, prepared for trial use in eye clinics having medical social workers, is another illustration of such co-operation. Similarly the lecture service of the social hygiene societies for parent-teacher associations includes instruction on the value of the prophylactic measures described for prevention of ophthalmia neonatorum; and their work with prenatal clinics encourages extension of the Wassermann blood test and other tests for the discovery of syphilis in expectant mothers. The personnel engaged in preschool vision testing—so important in detecting low visual acuity and other indications of eye handicaps—are likewise potentially a fruitful source of information and contact for the ophthalmologist who discovers evidence of gonorrhea or syphilis in a child referred to him and who desires to follow the disease back into the familial group. As the training of medical social workers for this work and eye clinic follow-up service grow and include a full understanding of these dangerous infections, this form of attack on eye hazards will become increasingly important. The well-organized publicity and pamphlet services of national agencies whose activities bear directly or indirectly upon sight conservation, supplemented by the promotional programs of state and local bodies, have been of inestimable benefit. Those of us who began the practice of ophthalmology a quarter of a century ago have seen great changes for the better both in caring for the blind and in protecting the sighted. Many of the pioneers among the professional and lay groups responsible for this progress are optimistic enough to believe that the movement for the prevention of blindness is just on the threshold of much greater achievements in the coming decade, not only in the United States but throughout the world.

If the most promising advances are to be realized, an important part must be played by social hygiene agencies in marshalling the

\* One such group of papers by outstanding specialists was published as Volume IV of the American Health Congress Series, 1926, and is still widely used for reference purposes in libraries.

combined forces of society for unremitting warfare on the so-called venereal diseases. Aside from their inroads on the eyes of children, perhaps the most pitiful cases are the young girls, often mere babies, who develop gonorrheal vaginitis. Here we find this micro-organism attacking the female sex organs, just as it attacks the delicate lining of the eyelids. Once it has invaded the body in this manner, it may cause very serious and widespread damage, and in any event becomes a difficult infection to dislodge and to prove cured. This is one of the infections which hospital medical and nursing services are always on guard against, because once the infection gets started in a children's or babies' ward, it seems to spread like a prairie fire. The rarity of such outbreaks in modern hospitals bears testimony to the admirable perfection of technique in disinfection of hands, uniforms, towels, nursing utensils and other sources of possible transmission of the infection from one child to another. Unhappily, the requisite scientific knowledge for diagnosing and promptly isolating an infected child in a family is not possessed by fathers and mothers. There remains much to be done by health departments and the medical profession in controlling this baffling disease outside the hospitals. All agencies interested in child health and protection need to follow this preventive medicine battle into the home and assist wherever possible. Its potential menace to many eyes in the family and the community is evident.

### **Social Hygiene and Eyes in Industry**

A study of syphilis and gonococcus infections in adult life readily discloses why social hygiene agencies and health authorities are so much concerned with these infections among industrial workers, aside from eye infections. To understand one reason, we need only to picture ourselves as riding behind an engineer who may run by a railroad signal because his brain is beginning to function erratically on account of syphilis; or to imagine being in a crew of men handling a crucible of molten metal by which we may be burned when some one fails in the vital sequence of teamwork because he flinches from the pain of gonorrheal inflammation. For another reason we may look over the expense ledgers of industry and read the costly figures of labor-turnover, compulsory insurance and early retirement pensions due to these diseases. Again we will find that

as a practical measure of administration the examination of applicants for employment, subsequent periodic health examinations, and other health supervision measures, constitute comparatively efficient methods of early detection of cases, which may be brought under treatment to the great gain of the infected individuals and of society.

The results of prophylaxis in combating gonorrheal infection of babies' eyes has been such a brilliant public health measure, and the combination of blood tests and prompt treatment for syphilis of expectant mothers has produced such remarkable results, that repeated attempts have been made to apply prophylactic measures to adults who have been exposed. But the exacting demands of science for thorough disinfection within a very few hours after exposure, and the great difficulties of dealing with these invading micro-organisms in the complicated structures of the genital organs of either sex, have thus far proved insuperable barriers to the widespread use in civil life of theoretically scientific and inexpensive preventive measures. Added to these difficulties is the fear, very properly entertained by the health officer, that superficial prophylactic measures employed by adults will lead to a false sense of security and failure to seek medical treatment when mild infections appear. As a practical matter, therefore, prophylaxis for adults has thus far been limited to those few who can be fully instructed and provided with proper facilities by private physicians or in clinics. Health officials wisely will take no responsibility for encouraging self-diagnosis or self-treatment at any stage of such deadly diseases, from the first moment of exposure to the last day of possible danger of spreading the infections to others. For these reasons the Health Department's advice usually is, "If you think you have been exposed, immediately consult your doctor or go to your Health Department for advice."

### **Some Actual Cases**

One is tempted to cite case histories in such articles as this, because they bring out dramatically the points under discussion. An illustration is the story back of a tragic picture of a young father, knowing that his sight cannot be saved, sitting up in a bed in a hospital ward, telling stories to his little son lying in an adjoining

bed with infected eyes for which the ophthalmologist is still fighting; the bewildered wife and frightened little daughter sitting near by, softly crying. The story is common enough. This young western miner went down to the "big city to see the sights," he got drunk, visited the vice district, lost his money, went home to his wife and children penitent, and resolved not to be foolish in the future. He did not know that gonorrhea is a dangerous disease, and when discharges from his infection appeared, he believed what he had so often heard, "that it was no worse than a bad cold." His family lived in a little one-room mountain shack. He and the little boy went outside to wash, his wife and daughter washed and dressed inside. The common towel and wash-basin by the stream, the man's use of these in attempted self-treatment of his infection, his washing and dressing of the little boy—all combined to bring about a gonorrheal infection in the eyes of both father and son. Inflammation of a miner's eye is no novelty and the precious days slipped by when early diagnosis and prompt treatment might have availed. Again the man, taking his family, went to the city to a clinic where the ophthalmologist saw the two patients. It was too late to save the father's eyes, but after long weeks one fairly good eye and one fairly bad one remained to the boy. From the scientific point of view the case was clear; and the accident of separate sleeping, dressing and bathing facilities for the wife and daughter presumably accounted for their protection from infection. But the ophthalmologist felt the needless tragedy of it, and his own helplessness. What should he answer when this young woman asked, "How could God permit this terrible thing to happen to my husband and child?" What could society say in reply to the charge that this husband had never been instructed or trained in self-control; or given any protection from the exploiters of commercialized prostitution and intoxicating beverages?

The following is an extract from a recent letter written in response to an appeal to the National Society for advice regarding a syphilis case: "We shall be very glad to co-operate in getting the right sort of influence brought to bear upon the family you write about. . . . I gather from your letter that the little girl is the daughter of the first wife, but in any event the logical procedure would seem to be to include in the blood studies the wife

and husband, and to see that they also have appropriate treatment.\* I take it that this child suffers from inherited syphilis, and the problem would be only half solved if the father or mother were untreated and the disease should later attack the central nervous system, perhaps causing locomotor ataxia, insanity, or blindness. In handling these problems we do not look upon them as involving morals, as was perhaps the case some years ago, nor are we concerned so much with how the blood stream of the family became contaminated as we are with having the virus eradicated."

The doctor who drafted this non-technical letter as the first of a series which brought assistance to a puzzled social worker who was trying to do what she could, felt much as did the ophthalmologist in the first case, that sex education, character training, public information, and community action along all the lines of social hygiene endeavor which these cases suggest might have prevented these tragedies.

#### **Necessity for Public to Know Eye Hazards from Venereal Diseases**

The banding together of agencies promoting such work is slowly but surely reducing these human sacrifices which go on behind our venereal disease prevalence statistics. Perhaps a word regarding this question of prevalence is permissible. A conservative estimate of syphilis cases under treatment in the United States is 4.26 per 1,000 inhabitants.† This means that more than half a million people are known to be constantly under medical care for this infection; but this is only a portion of all the cases. The unrecognized infections may be even more dangerous, because there is no chance to do anything for them or for the protection of the public. When it is considered that gonorrhea is probably three to five times as prevalent as syphilis, and that the greatest number of cases of

\* The girl's physician had made a clinical diagnosis of syphilis and the laboratory blood examination had confirmed this. Attention had first been drawn to this child by discovery of low visual acuity when she was examined because she was "backward in her studies."

† One of the most valuable publications on syphilis is the Feb., 1932, number of the *American Journal of Public Health*: "Syphilis from the Epidemiologist's Point of View," by Thomas Parran, Jr. "The Control of Syphilis from the Health Officer's Viewpoint," by N. A. Nelson, M.D. "Practicability of Epidemiological Methods in the Control of Syphilis," by William L. Munson, M.D. "Syphilis in a Rural Negro Population in Tennessee," by James A. Crabtree, M.D., and E. L. Bishop, M.D.



both diseases are first contracted about 21 years of age and the great majority within the range of years from 15 to 30, it must be evident that here is a group of the most dangerous and powerful disease enemies with which mankind has to deal. Gonorrhea strikes particularly at the reproductive systems of both men and women in young adult life, and for this reason is often called the "great sterilizer" of the human race. Syphilis, on the other hand, seldom prevents conception but kills the child before birth or savagely maims him physically or mentally. At the other end of the span of life syphilis also insidiously exacts its toll of lives, thus becoming called, as has been mentioned, the "greatest killer."

When the public fully understands these facts and can face them without fear or cruel ostracism and lack of sympathy for the victims of these diseases, the orderly processes of public health and social work will supplement the services of medicine and nursing, to the end that discovery of cases will be made promptly after infection, treatment will be applied, effective after-care and observation will follow. The eye, no less than the brain and the rest of the body structures, will be aided to overcome these infections before irreparable damage has been done. And even more important—the social, religious, and educational leadership of the community will combine to set up effective protective measures for youth and encourage standards of personal conduct calculated to reduce exposure to these diseases and to related moral hazards.

The question frequently arises, "Isn't the cost of all this work prohibitive?" When we consider that the records of venereal diseases indicate 10 out of each 1,000 males and 4.86 of each 1,000 females are infected—a combined rate of 7.46 per 1,000 of the population; when we consider that the young men examined for the draft during the World War showed 55.2 per 1,000 (10.5 syphilis, 44.7 gonorrhea); and when we estimate conservatively that at least \$15,000,000 per year are spent on clinic and private care of these diseases, and \$11,270,000 annually provided for 12,300 insane patients whom the public would not have to support if they had not contracted syphilis—when we consider all these, and add estimates of wage losses, we must agree that we cannot afford to permit the continued ravages of such costly and deadly disease enemies.



### Hope for Eradication

One has only to look back across the years of the first quarter of this century to be impressed with the progress made against syphilis and gonococcus infections. It is probable that the protection of the eye from the ravages of these diseases will rank first in the advances of the next decade. The freeing of prenatal life from them will rank as a close second in the list of achievement. The joining of medical and social forces in a successful drive against these diseases in family life is destined to rank high. Industrial measures may be expected to follow the encouraging examples of the Army and Navy Medical Corps in dealing effectively with these problems. By such processes of attrition it might be forecast that the accessible and susceptible victims of the "Great Imitator" or "Killer"—syphilis, and the "Great Sterilizer"—gonorrhea, may be reduced gradually to those migratory, promiscuous, careless individuals who have no homes, are not employed, and do not produce children. There is much to support the view that these diseases, like some others, may be reduced to a point in prevalence below which they cannot maintain themselves in the community and accordingly begin to die out. It is justifiable perhaps to encourage ourselves to believe that this result may come about. Finally, it may be remembered as a cheerful note in considering this bondage to sickness and death, that if these diseases could have conquered the human race, our ignorance, silence, and neglect would have permitted our extinction long ago.

## Artificial Lighting for the Schoolroom

Thomas A. Pilkey

PROPER illumination is an important aspect of the prevention of blindness. Lighting the home was discussed in a recent issue; here we consider the lighting problems of a school building; and in a future issue the lighting of industrial plants will be taken up

SCHOOLS in the past have been regarded as daylight plants and much thought has been given to the size and location of the windows in an effort to provide adequate natural lighting for the classrooms. But within a comparatively few years there has been a change from a simple program of instruction, in which all classes were taught by day, to a complex educational system that includes not only primary instruction by day, but also extension classes and community meetings by night. In addition, unfortunately, many city schools are surrounded by high buildings, and natural light is frequently inadequate in the classrooms during the day. Moreover, even where the school building is surrounded by unobstructed sky, there are those inevitable cloudy or stormy days which, in some localities, comprise such a large percentage of the school year. As a result, artificial lighting has become an essential part of the modern school building.

Artificial lighting is not a matter of hanging bare incandescent lamps haphazardly about the room. There are a number of requirements which must be met to assure good artificial illumination. These are adequate light, elimination of glare, good distribution of light, sufficient wiring capacity, and a system of maintenance.

Illumination in classrooms and other workrooms should not fall below certain minimum values, which are expressed in foot-candles. The foot-candle is a definite and measurable unit. It can

be defined as the illumination on a surface which is one foot from a one candlepower source and normal to its beam of light. This value is measured with a foot-candle meter, or other portable photometer. The following table gives the range of illumination values that are desirable for the various rooms in the school:

Classrooms and study halls, on desks and blackboards.....	12- 6	foot-candles	
Drafting rooms, on tables.....	15-10	"	"
Laboratories, on the work.....	12- 8	"	"
Cloak rooms.....	3- 1	"	"
Corridors.....	4- 2	"	"
Auditoriums and assembly rooms, not used for classes or study.....	4- 2	"	"

From the standpoint of the conservation of vision and general efficiency, it is advisable to use the higher values recommended, although satisfactory results will be obtained from the minimum values mentioned.

It is necessary to get the proper level of illumination without any glare. Brightness or glare is often mistaken for excessive illumination. The latter is hardly possible when we stop to consider that our eyes function under natural lighting levels as high as 10,000 foot-candles. Glare is objectionable because it causes discomfort and eye fatigue—it interferes with clear vision and increases the likelihood of accidents. It may actually injure the students' sight as a result of long exposure. Glare is any brightness within the field of view of such a character as to cause annoyance, discomfort, interference with vision, or eye fatigue. The light source may be too bright—that is, it may give off too high a candlepower per square inch of area, or it may direct too much light toward the eye. A given light source may lie too near the center of the field of vision for comfort. The contrast may be too great between the light source and its darker surroundings. If a light source of given strength remains within the field of vision for too long a time, the eye may be fatigued. The light sources should be carefully shielded by means of diffusing globes or reflectors, which either effectively enlarge the light sources or conceal them from view.

Reflected glare is often as bad as direct glare. Glossy finishes,

glazed paper, shiny desk-tops and glass surfaces reflect bright images of windows and artificial light sources. This is particularly annoying as the reflection is generally from below the eye, from which discomfort the eye has no natural protection. To avoid this, the walls, desk-tops and other objects should have a dull or matt finish. The use of unglazed paper is also desirable.

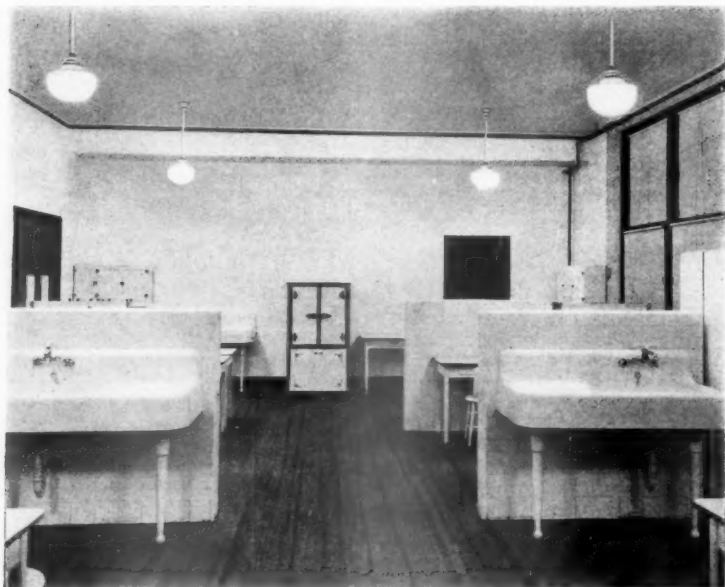


Typical large classroom in Millburn, N. J., High School, lighted to a level of 13 foot-candles by means of 200 watt Mazda lamps in simple enclosing globes spaced 9 feet x 11 feet, and mounted 9 feet above the floor. White walls and ceiling, medium brown woodwork.

It is not only necessary to have the proper amount of light with good diffusion and absence of glare, but the light should be distributed as evenly as practicable over the working plane. This is accomplished by proper arrangement of the light outlets, their spacing not to exceed one and one-half times the distance from the unit to the working plane. In the corridors and in the auditorium this spacing may be exceeded, as in these areas an even distribution of light is not so essential. Manufacturers of lighting equipment

usually specify what spacing should be used for a given mounting height of the unit.

The luminaires may be of the direct or indirect type. Bare lamps should never be used, as the modern incandescent lamp is too bright to be used unprotected and the distribution of light from it is not satisfactory for this class of work. The luminaire serves



A well-lighted domestic science room in the Millburn, N. J., High School. An average level of 15 foot-candles is obtained from 200 watt Mazda lamps in enclosing globes mounted  $9\frac{1}{2}$  feet above the floor. The spacing is 12 feet x 12 feet. White walls and ceiling are of material aid in attaining this effect.

to reduce the brightness of the light source and distribute the light into useful channels.

With a direct lighting system almost all the light is sent from the luminaire directly to the work or place where the light is used. By indirect lighting is meant that system whereby the light is reflected to the ceiling, which, in turn, reflects it to the work. In some cases very nearly half of the light comes through the lower part of the luminaire and the remainder is thrown on the ceiling.

Such a system is known as a semi-indirect lighting system. Any of these systems is suitable for the schoolroom.

If enclosing globes are used, they should be of sufficient density to conceal the light source and of a size large enough to offer low surface brightness. Assuming the use of thin-blown opal or cased glass, or other glass of similar diffusing properties, the globe should have a maximum width not less than the following:

For 100 watt lamp . . . . .	12 inches
For 100 to 150 watt lamp . . . . .	14 "
For 150 to 200 watt lamp . . . . .	16 "
For 300 to 500 watt lamp . . . . .	18 "

With any system of lighting the color of the walls and ceiling has a decided influence on the ultimate result. Light-colored surroundings permit the maximum amount of light to be available on the working plane. Dark-colored surroundings do not reflect the light readily and hence the efficiency of the system is reduced. The ceilings should be light in color—preferably white. The tint of the wall surfaces is a matter of personal preference. In north rooms a soft, pale olive with a slight blue cast will give good results, while the same color with a slight yellow cast would be better for south rooms. Light buff, too, is considered a good color and may be used for the walls of east and west rooms which receive sunlight for approximately half of the day. Matt finishes are recommended in order to prevent reflected glare.

Regardless of how good a lighting system is, it will soon become unsatisfactory if the luminaires are allowed to accumulate dust and soot. In order to derive the greatest benefit from the lighting equipment over a long period of time, a regular system of maintenance should be inaugurated. It should consist of keeping the lamps and reflectors clean, maintaining a light-colored interior finish, and filling empty sockets and replacing burned-out and blackened lamps with new ones of the correct size. Some reliable employee should be made responsible for the work of maintenance and keeping a record of it. In this way students will continue to get the illumination to which they are entitled.

## Medical Social Service in Saving Sight

Eleanor P. Brown

**SOCIAL workers are now recognized as indispensable factors in bringing eye treatments to successful conclusions among patients of hospitals and clinics**

**I**N November, 1930, the late Dr. George S. Derby made a challenging statement at the annual meeting of the National Society for the Prevention of Blindness, of whose Board of Directors he was a member. "In my opinion," said Dr. Derby, "a very great opportunity is now knocking at the door. . . . Medical social service is one of the most potent methods of conserving eyesight. . . . It is to be sincerely hoped that the National Society will feel constrained to direct more of its activities into this field."

At the same time Dr. Derby, professor of ophthalmology at Harvard Medical School and chief surgeon at the Massachusetts Eye and Ear Infirmary, offered the facilities of the Infirmary in providing, through the social service department and under its director, special training for social workers engaged, or about to engage, in eye service.

It was not a new idea to the Society—the part medical social service might play in the prevention of blindness. For many years the value of such service had become increasingly evident to those of us coming into more or less close touch with clinic patients suffering from eye difficulties. In 1929 another member of the Board had encouraged the Society, the Associated Out-patient Clinics and the New York City Welfare Council to develop a plan for providing some instruction for medical social workers through a series of study meetings in which ophthalmologists participated with the workers in considering various forms of eye disease and their medical social implications.

Dr. Derby's suggestion, however, resulted in a definite step. A



special committee\* appointed by the Board, with Dr. Derby as consultant, was asked to consider the possibilities of sponsoring a plan for the training and placement of medical social workers to be delegated for service with eye patients in hospitals and clinics. On January 23, 1931, this committee recommended the adoption of a program—in its first year to be considered as an experiment—which called for placement on scholarship at the Massachusetts Eye and Ear Infirmary of a selected number of workers for special training in the social service department. It further provided for the location after training of these workers in strategic spots where they might be able most forcibly to demonstrate the value of their service, particularly in view of this special preparation.

What should constitute the required background of its scholarship students? Here again the Society felt called upon to experiment in the development of standards that later might be more definitely set. For the first course, given during April, May and June, three students of varying qualifications were chosen. Two were students from the New York School of Social Work—one with experience in hospital social work, the other with eighteen months of nurses' training. Both had work with the School to complete before receiving their diplomas; and it was only through the School's interested co-operation that necessary adjustments could be made and these two freed for training in Boston. Our third student was chosen from the staff of a social service department, with several years' experience in hospital social work, the latter part of which had been exclusively with eye cases. She was given leave of absence by her department and is now back on the job. Is she better able to put through a constructive piece of work and so to save sight? That is one of the questions we want answered.

One of the three, because of illness, could not stay through the spring term, and finished her required training as a special student in the second course. On December 1 she started at Wills Eye Hospital in Philadelphia, with the job of organizing and administering a social service department. The third of our pioneer group is temporarily attached to social service in another branch of medi-

\* Dr. Ellice M. Alger, Dr. Park Lewis, Dr. Conrad Berens, and a member of the staff of the National Society. Later Miss M. Antoinette Cannon and Miss Edith Baker were added.

cine, pending opportunity in New York City for work in an eye hospital or clinic.

Originally planned to cover a four months' period, the first course had necessarily to be shortened, but the second one, starting on October 5, 1931, was scheduled for sixteen weeks. As part of a national scheme, the Society has borne in mind the advisability of placing workers in scattered localities, and with this in view consideration was given to an application for a trained worker in the eye department of Charity Hospital, New Orleans. The size of this hospital's eye load, its affiliations with Tulane University and with other agencies of the community, marked it as a proper choice for demonstration purposes. A worker for training and for assignment to the New Orleans job was selected from the social service department of Louisville City Hospital who has had, added to her practical experience, graduate work in Tulane School of Social Service.

Washington University Hospital and Allied Clinics in St. Louis also applied for a worker to be placed in the new McMillan Eye Hospital. Here seemed an opportunity to contribute to the value of a growing institution and to place someone where the affiliation with a university might logically lead to the development of another training center. A member of the general social service staff was chosen, who after her period at the Massachusetts Eye and Ear Infirmary would start work at McMillan Hospital. In this instance the background is one of training in social work, and experience with a family agency and in medical social service.

Also entered as a scholarship student at the second course in Boston was a worker from the staff of a hospital in New York City. A graduate nurse, she had had a number of years' experience in carrying the social service of her hospital's eye department; leave of absence was granted so that she might get the special preparation which she felt would add to the value of her work.

So there we are with a bird's-eye view of the personnel, given what may be thought of as post-graduate training. That they will make a very real contribution to prevention of blindness is our belief; it is only because of this belief that we are justified in working on the plan. The Society's special committee mentioned above, strengthened by the addition of two medical social workers, has given careful consideration not only to the selection of students,

but to the choice of their location after training. It has taken into account geographic distribution, medical standing of the particular institution, its influence in the community, the character of its social service program, its teaching opportunity and, above all, the true desire of its medical staff to have this service. Without the doctors' sympathy and willingness to co-operate with the social worker, little could be accomplished through a demonstration, and little chance would be had of building up an efficient service. In more than one instance the Society is having to underwrite a portion of the worker's salary for what is distinctly understood to be a demonstration period, with the agreement that at the end of such period this salary be taken over entirely by the hospital—granted, of course, the service has shown itself to be worth while. During this time, a certain supervisory relationship is maintained by the Society, and it is well recognized that such financial assistance is given not as aid to a particular hospital, but for demonstrating the value of a project which will contribute, as we believe, to the whole national program of sight conservation.

Are we not bound at this point to consider seriously just where we are and what should be our next step? As you can imagine, in coming thus far with the project we have suffered all kinds of growing pains. Is the stage reached where we can settle down into a more comfortable state of following a definite plan, or should we continue on an experimental basis, or what is very much to the point, should we cease aggressive action and be content with having added these workers to a comparatively new field, leaving further developments to come from the medical social workers themselves?

We do not propose here to discuss the contents of the training course nor its many ramifications. Exactly what this special instruction should consist of has been very carefully thought out, but it is still in the developmental stage and must be evaluated in the light of actual service from those who have participated in it. There are definite things, however, on which we want the thinking of all who are in hospital work, not to mention the many others engaged directly or indirectly in preventing blindness.

In closing, I should like to leave the following questions for the consideration of all those interested in medical social eye work.

They have long been in our mind but have occurred with increasing emphasis during the past year. We shall indeed welcome co-operation in helping us to think along the right line.

Should specialized training in the eye field be encouraged? Is it more needed for ophthalmological service than for other departments of the general hospital? Is opportunity for this training welcomed as filling a particular need or only as one step toward the ideal of specialized training? Should the delegation of workers to handle only eye cases be encouraged? On what previous experience and training should their entry into the specialized field be based?

**Editor's Note.**—In the interest of the subject we are herewith presenting an outline of the training course for medical social eye workers at the Massachusetts Eye and Ear Infirmary October 5, 1931, to January 23, 1932 (four periods of four weeks each); this has been completed since the preparation of the above article.

#### **First Period\***

*Medical Teaching.*—Eight medical lectures given by ophthalmologists on the staff; (2) Recommended reading and study of eye diseases;† and (3) Study in eye clinic through special cases used for demonstration by medical staff.

*Social Management in the Eye Clinic.*—(1) Observation of clinic activities—personnel and their respective duties; (2) Methods of case selection; (3) Reasons for case selection; (4) History and development of department; and (5) Records.

*Case Work Study* (Through observation, conference and reading).—(1) Bulk handling in clinics; (2) Selected case work; and (3) Relation with outside agencies.

*Community Program.*—(1) Study of community set-up—public health, educational, social and legislative aspects; and (2) Visits to local organizations for the blind, local organizations for prevention of blindness and sight-saving classes.

\* The time during this first period might be considered as equally divided among medical teaching, clinic management and case work study, with minor emphasis on study of the community program.

† Subject matter of the medical reading and lectures includes: anatomy of the eye; diseases of the ciliary body, uveal tract, sclera, lens, lids and lacrimal apparatus; and refractive errors.

### Second Period

*Case Work Participation.*—(1) Following through case problems; (2) Conferences with workers in social service department; (3) Clinic talks by doctors in Massachusetts General; and (4) Place of the general hospital in eye work.

*Special Study Project.*—(1) Selection of cataract cases appropriate for statistical study; (2) Follow-up of cases in homes and clinic; (3) Conferences with staff doctors re medical data; and (4) Conferences with social workers re social data.

*Clinic Work Participation.*—(1) Handling of patients in clinic; (2) Recording; and (3) Detailed work with patients, especially in connection with cataract cases used in study.

### Third Period

*Case Work.*—Continued with cataract patients.

*Special Project.*—Continued as in second period.

*Organization.*—Lectures, conferences, discussions and reading.

### Fourth Period

*Special Project.*—(1) Continued as in second and third periods; (2) Assembly and evaluation of material; (3) Statistical formulation of material; and (4) Interpretation of study.

*Review of Course.*—Conference.

*Criticism of Course.*—Conference.

*Future Program.*—Conference.

*Problem of Students.*—(1) Study of anticipated jobs of individual students; and (2) Conferences based on what the individual needs will be.

## Editorials

### Seeing 1932 Through

**A**N ANALYSIS of the past year's activities of the National Society indicates some remarkable advances in saving sight. Ophthalmia neonatorum has reached a new "low," and, contrary to a financial interpretation of the word, low is what we aim to keep it. Sight-saving classes have steadily increased. Preschool vision testing was carried on in more communities. Medical social service in eye clinics is taking root. Industrial eye hygiene and safety measures are more zealously sought. All in all, some noteworthy advances were made.

To predict what the history of 1932 will be, however, is a different matter. The necessity for emergency relief is urgently felt in every community in the United States. Local communities and official agencies already have had to reduce their activities in health work. Present hardships are bound to increase physical and mental handicaps for the future. Likewise, the neglected eyes of today mean added hardships and perhaps added pauperism in the future. Think what a year of neglect to the eyes of children might cost! We should be paying for many years to come in terms of handicaps, of expense, of regret and reproach. In a letter discussing emergency relief, Mr. Walter S. Gifford, director of The President's Organization on Unemployment Relief, said:

"It is obviously important, however, that localities give careful consideration to a well-rounded community program and undertake to carry forward health work, where needs will be increased; child care which will present even greater demands if the welfare of children is to be looked after; and that considerable group of so-called character building agencies for whose services there has probably never been a greater need, if the morale of young people and adults is to be maintained."

The National Society has helped the cause of good sight through many years and will continue to do so. But, in order to work most efficaciously, it requires the co-operation of local communities. It

therefore beseeches everyone to consider the problem of sight conservation and to hold on under the pressure of more obvious and immediate needs. In order to see through the years, everyone—local agencies, health boards, educators, employers, and the National Society—must co-operate in seeing 1932 through.

### **George Strong Derby \***

The passing of George Strong Derby was a sad and serious blow to his family, his friends, his patients, and the countless persons who benefitted more remotely yet none the less definitely by the generous contributions of his time and energy to the various aspects of ophthalmology and the conservation of vision. His career was a consistent and vigorous service in behalf of sight.

It was in this spirit of devotion to the cause of safeguarding vision that he accepted membership on the Board of Directors of the National Society for the Prevention of Blindness. This affiliation was no empty formality on his part. During the nine years in which he participated in the Directorship of the organization he not only followed with keen interest the work carried on by the Society but took a leading part in inaugurating sight-saving activities of a most vital nature. Through his initiative an important demonstration of the value of social service in salvaging eyes afflicted with glaucoma was undertaken by the National Society in co-operation with the Massachusetts Eye and Ear Infirmary. Dr. Derby was also primarily responsible for the introduction of a course for training medical social workers for service in eye hospitals and clinics. This project, jointly carried on by the Massachusetts Eye and Ear Infirmary and the National Society, is destined to have an immeasurable influence on the care and treatment of sick eyes.

The conservation of vision has indeed lost an ardent supporter, and the Directors of the National Society for the Prevention of Blindness, an honored associate.

\* Resolution passed by the Board of Directors at the death of Dr. Derby, December 12, 1931.



## Note and Comment

**September Sight-Saving Review.**—So great has been the demand for the September issue of THE SIGHT-SAVING REVIEW that it has been completely exhausted. The National Society will be glad to receive any unused copies of the September number, and to extend the subscription one issue to all those who will return them.

**Education of Myopes in England.**—A visit of inspection to the Daisy Hill Myope School in Bradford, England, opened discussion among workers and educators of the partially sighted and blind children on the education of myopes. Although as yet there is no cure for myopia or lengthening of the eyeball, special care may prevent the condition from progressing. General building up of the health, and restricted use of the eyes, with frequent re-examination to watch the eye condition, are important factors in arresting the progress of myopia. Educationally, it must be borne in mind that the myope is a sighted child, and must be educated as such. A suggestion was made to change the name, "myope class," to the more positive and constructive "sight-saving class."

**Cataract Clinics in India.**—At the annual eye clinic of the Seth Heranand Charitable Eye Hospital, a group of American ophthalmologists plan to perform about 100 cataract operations a day. India seems to be a special breeding ground for cataract, due, perhaps, to the intense sunlight and the poor diet among the natives. Other eye diseases will be treated, with one group of physicians operating and the other fitting the patients with glasses.

**Eyes in the Air.**—The greater complexity of modern life and its reliance upon machines demand an increased emphasis upon sense acuity. The visual requirements for locomotion are now the subject of wide study. According to an editorial comment in a recent issue of the *American Journal of Ophthalmology*, good visual acuity, a full field of vision, and accurate depth perception are fundamental requirements for flying. The physical changes that take place in the air cause a loss in visual acuity and failure of the

extra muscle balance; curiously, the smoking of one cigar affects the vision more than drinking five ounces of cognac; psychological and emotional attitudes have a marked bearing upon the ability to see. It is of interest to learn that although the first regulations for pilots of flying machines were most stringent for both private and public operators, a recent amendment of the rules governing flying requirements permits that pilots of private machines may use correcting lenses to bring their eyesight up to the high requirements of commercial flyers. This gives opportunity to fly to the 5,000 who had formerly been rejected as flyers because of slight visual defects.

**Unusual Field for the Prevention of Blindness in Australia.**—

According to Dr. J. Lockhart Gibson, in an article in the *British Journal of Ophthalmology*, the children of Australia suffer one menace to sight that is not common to children of other lands: almost uniformly, each house in rural Australia is surrounded by a wooden veranda, painted with lead paint. The intense action of the sun soon disintegrates the paint, and children playing on the verandas get the fine paint dust on their hands, and eventually into their mouths. To counteract this danger, a law has been passed making it a penal offense to use lead paints in places within the reach of children. Although some good has resulted, until parents themselves realize the constant menace of blindness or partial optic atrophy, as well as the other hazards of lead poisoning to their children, these cases will persist.

**Eyesight for Drivers.**—Ability to see ahead is no criterion for the visual requirements of automobile drivers, is the opinion of N. Bishop Harman, in an article in the *British Medical Journal*. Lack of a full field of vision and loss of binocular vision are more often the cause of driving accidents than is dullness of visual acuity. Dr. Harman would substitute for the inadequate visual acuity test now given a test in the ability to play games, such as tennis or soccer, where visual reaction time and general intelligence would furnish guides of a driver's physical and mental fitness. While he urges strict study of the physical and visual equipment of the commercial and public chauffeur, Dr. Harman finds that the private driver, for his own peace of mind, will determine his own driv-

ing limitations, and only those who feel confident of their ability to see will drive.

An interesting note on the relation of vision to motor accidents is seen in the monthly bulletin, *Street Accidents*, published by the Police Department of the City of New York. During the month of November collisions of cars injured 1,379 persons and killed 18; misjudgment of signals caused the injury of 256 people, and the misjudgment of distance, closely connected with binocular vision, caused the death of 2 and the injury of 346 people. Apropos the subject, field of vision and muscle balance are explained in a short article in the February *Popular Mechanics*. A map of the field of vision for the normally sighted person shows that white is most prominent of colors in the field of vision, while red is more visible to the side view than is green. Simple tests are suggested for determining field of vision and muscle balance.

**Mexico Compensates Workers.**—The new Mexican Federal Labor Code, which went into effect last August, provides a sliding scale of compensation awards. According to this allowance, the complete loss of sight is a 100 per cent disability, and is worth pay for 918 days; eye and vision losses of lesser magnitude drop from this to 15 per cent compensation when there is a loss of 40 per cent of visual acuity in one eye of a worker whose vision is an important asset in his occupation. These arbitrary valuations for damages suffered are to replace the local laws on compensation which were elastic and variable in many places, not always to the advantage of the injured workman.

**Prevention of Blindness in India.**—The 1930 report of the Blind Relief Association of India again stresses the fact that there are 5,000,000 blind in India, that more than 60 per cent of these need not have been blind, and that many of them might yet be saved could they be found and treated. Medical aid to the rural centers is expensive, and the few doctors and clinics are not fully utilized because of native ignorance and superstition. The Blind Relief Association administers to this rural section through the services of the field workers who travel from village to village inspecting the eyes of newborn babies, preventing eye troubles in cases of small-pox, treating and sending to hospitals cases of glaucoma, trachoma

cataract, etc. Publications in the vernacular, slides, and lectures are included in the campaign to make rural India eye conservation conscious.

**Eye Clinic for Seamen.**—A contribution to the prevention of blindness and the conservation of sight which has international scope is the recent establishment of the John Markle Eye Clinic in connection with the Seamen's Church Institute in New York City. Seamen of all nationalities with eye difficulties will be treated in this clinic, at whose head are Dr. Conrad Berens and Dr. Giovanni Paccione, at the Institute's headquarters, 25 South Street. The clinic is open Tuesday and Friday mornings.

**Tear Gas Burns.**—Chloracetophenone, more commonly known as tear gas, because of its pronounced effect upon the lachrymal ducts, seems to have entered the list of dangerous playthings which unnecessarily menace eyesight. Three cases of accidental injury with this gas are reported, two of whom recovered after prompt treatment. From clinical and experimental observation the most efficacious treatment consists of prompt flushing of the eye with a solution of sodium sulphate in water and glycerin.

**Increasing Use of Glasses Among English School Children.**—According to Dr. Gordon Lilico, an English health officer, a greater number of children are now being examined for vision defects, and a larger percentage of them are having defects corrected. While this shows, to some extent, that parents are taking a more active interest in the eye health of their children, Dr. Lilico finds that some of the increase may be attributed to the greater eye work now prevalent, with longer periods of home study, and to the increasing habit of school children to attend motion pictures.

While English parents are buying more glasses for their children, Dr. Frank Allardice, according to the *Medical Officer* (England), urges parents to see that the children who need glasses wear them regularly and consistently. He says, "One cannot imagine a child who carries a crutch leaving it behind for fear that it might be broken during play."

**Learning by Seeing.**—That sight is the most important of the senses in learning has been the basis of much of our contemporary

educational methods. Charles H. Selzer, instructor in the department of psychology, State Teachers College, Pennsylvania, has concretely demonstrated this superiority of sight. Experiment showed that pupils learned more quickly and more accurately a list of nonsense syllables by seeing them than by hearing them. "It is no longer enough, however," he says, "that educators recognize the relative advantage of visual perception. . . . To obtain the greatest degree of visual aid we need not only efficient visual receptive organs, but these must be stimulated by objects and situations that are biologically adapted to elicit a response." He discounts the disadvantages of low degrees of myopia, although he finds that astigmatism and hyperopia are visual handicaps for learning. Because he finds that one eye is stronger than the other (one-third are left-eyed, the remaining are right-eyed), he recommends bilateral lighting. Other eye defects are responsible for inability to learn, particularly poor eye muscle balance, which often accounts for the child's failure to read and spell accurately.

**Eye Hazard Eliminated.**—While authenticated statistics are not available, there is no doubt that the possibility of flying and splintering glass in cases of collision threatens the eyesight of every motorist and injures the sight of many. The recognition of this preventable menace to sight has been the concern of insurance companies, ophthalmologists and workers for the prevention of blindness, as well as of the manufacturers of non-shatterable glass. It was a satisfaction to note that at the recent Automobile Show in New York City nearly all the 1932 cars come equipped throughout, or may be ordered, with non-shatterable glass.

**Astigmatism Test.**—A clock with striped circles instead of the usual figures is a new test chart for astigmatism. If, when looking at this clock, some of the circles appear blacker than others, astigmatism is present. But this simple test, warning of eye trouble, should not take the place of thorough ophthalmic examination.

**Prevention Film Has Practical Results.**—After a showing of the National Society's film, "Preventing Blindness and Saving Sight," to a group of 400 Japanese on the west coast, a worker for the blind reports that seven of the audience shortly thereafter

visited oculists, to discover and begin correction of eye defects and disease that demanded immediate attention.

**Ophthalmia Prophylaxis in Mexico.**—An official high in the ranks of the department of health in Mexico has recently issued a circular urging the substitution of citrate of silver for nitrate of silver as a routine prophylactic in the eyes of the newborn, claiming that silver nitrate is the cause of many cases of blindness.

Dr. A. Torres Estrada, an ophthalmologist of repute in Mexico and a director of the *Anales* of the Mexican Society of Ophthalmology, hastens to refute the statement, pointing out that never in twenty years has there been an authenticated case of blindness developing after timely use of silver nitrate, and that where blindness has developed, it is because the parents did not use a prophylactic until after the ophthalmia had developed a month or more and progressed to a point past cure. He advises obstetricians and midwives to look to the United States, France and Germany, where the use of silver nitrate is mandatory at birth, and claims that in cases where the solution has been even stronger than the usual one per cent, no damage has resulted. He looks forward to the time when silver nitrate will be used in the eyes of all Mexican babies, taking the place of the less effective lemon juice and argyrol now in common use.

**Sunlight for Babies.**—A revised pamphlet has been issued by the Children's Bureau of the United States Department of Labor giving detailed instructions for year-round sunbaths for infants and children. There is no danger to the baby's eyes, says the Bureau, unless the eyes are turned directly toward the sun. "If he (the baby) lies with his feet pointing away from the sun and his head slightly raised, the shadow of his forehead, eyebrows and eyelids will shield his eyes."

**School Eye Clinics in Cleveland.**—Under the auspices of the Cleveland Board of Education school eye clinics are located in three parts of the city, and render a valued service to sight conservation. During the past two years 8,050 school children, in grades from kindergarten to the ninth grade, visited the clinics; 1,958 children were tested for visual acuity, of whom 1,713 were

fitted with glasses. The greatest number of corrections were made among children in the third, fourth, fifth, sixth and seventh grades, while strabismus cases were greatest among children in the kindergarten and first grade. In their effort to send the well child to school the eye clinics increase their activity during the month of September, replacing broken glasses, retesting for visual acuity and preparing the eyes of school children for the beginning of the school year.

**Eye Protection in Industry.**—"The more eye protection is studied in connection with industrial occupations, the larger does the list grow where eye protection is needed," says *Safety Engineering* for December. A list of twenty-nine operations in the car and locomotive department of an eastern railroad, where eye protection is an integral part of routine procedure, includes riveting, welding, grinding, cutting, planing, drilling, chipping and cleaning.

**New Prevention of Blindness Head in Missouri.**—The Missouri Commission for the Blind announces the resignation of Dr. Meyer Wiener, director of the Department for the Prevention of Blindness. Dr. Wiener, who has served in that office for five years, has devoted the major portion of his time to state-wide activities in the conservation of sight. Succeeding him is Dr. Harvey J. Howard, professor of ophthalmology at Washington University School of Medicine, and director of the McMillan Eye and Ear Hospital and the Oscar Johnson Institute.

**Pennsylvania's Ten Year Program.**—The state of Pennsylvania has formulated a co-operative program for the welfare of its children through the co-ordination of the activities of the departments concerned with child welfare. Its recently published "Ten Year Program for Children" tells how the program was built and what it will accomplish.

Children with visual handicaps have been made an integral part of the ten year program; study is outlined for investigation of community resources for the education of the blind and partially sighted; estimates are made of medical and social facilities for these children and for the preschool child with visual handicap. Educational programs will stress the need for full social, mental



and vocational guidance for these children, considering the proper school for each type; legislative efforts will—(1) emphasize the need for more classes for the blind and the partially seeing child where they are needed; (2) stimulate the co-operation between the teacher-training centers and this special field of education; and (3) increase the state appropriation for this work.

**New Light-Measuring Device.**—The illuminating world is interested in the new device introduced by the Weston Electric Company of Newark, N. J., known as the Weston Illuminometer, model 103. The uncomplicated readings, the permanency of its standards, and its immediate response to delicate changes of light recommend it to those who must have accurate means for measuring light.

**Vision Defects of Skilled Workers.**—In a recent survey analyzing the health of male native-born insurance policy holders it was noted that there was a great difference in the rate of physical impairment among the various occupational groups, for which the highest was among the skilled trade group. A special study of the health records of the workers in the skilled trades has been made by the United States Public Health Service. It is interesting, as well as challenging, to note that the visual defects of this group exceeded those of any other group, particularly in uncorrected visual defects. In certain trades where eye use and probably eye abuse are greatest, it is not surprising to find a high rate of uncorrected and corrected visual impairment; printers, garment workers, cutters, and tailors showed more than 50 per cent eye defect with 30 per cent uncorrected. Other groups with high visual impairment were metal workers, hotel workers, butchers and municipal firemen and policemen.

**Trachoma Survey in the Rio Grande Valley, Texas.**—Because of repeated reports of prevalence of trachoma in the citrus region of the Rio Grande Valley, the United States Public Health Service made a survey of the eyes of 11,054 school children in order to locate cases of this disease. Of the children examined in 76 schools, 44 cases were discovered, 75 more were considered suspicious, and a large number of cases of folliculosis were found. Treatment was

immediately instituted for all children showing follicular symptoms, but it was felt that the co-operation between the medical, public health, and school authorities and the high standards of personal hygiene among the American population were effective barriers against the spread of trachoma in this region.

**Sight-Saving Class in Montreal.**—The first sight-saving class in Montreal, and the fifteenth in Canada, was opened this past fall with Miss Florence Butler, a student of sight-saving class methods at Teachers College, Columbia University, last summer, as the teacher in charge. Although Canada has only fifteen cities of sufficient size to warrant the establishment of sight-saving classes, and two of these have a very small English-speaking school population, the Prevention of Blindness Department of the Canadian National Institute for the Blind hopes to establish more sight-saving classes throughout the Dominion.

**California Helps Prevent Ophthalmia Neonatorum.**—Although the use of a prophylactic in the eyes of all newborn babies is not mandatory in California, the state is encouraging the practice by furnishing doctors and midwives ampules of silver nitrate free of charge. Until recently, supplies were purchased commercially at great expense to the state; now the state laboratory manufactures its own silver nitrate at a considerable saving.

**Law Penalizes Employee's Carelessness.**—While workmen's compensation makes every effort to protect the employee, a recent decision emphasizes the employee's own responsibility to avoid accidents. A mechanic employed as a grinder of castings was required by plant ruling to wear protective goggles at his position; a chip struck him in the eye at a time when, he admits, he did not have his goggles on; finding the cause of the accident "wilful failure to use a reasonable safety appliance provided at the position," the court refused to award the claimed damages.

**C. G. Henderson.**—Mr. C. G. Henderson, founder and former president of the All-India Blind Relief Association, died suddenly in England in September, 1931. While in India on a civil service commission, Mr. Henderson realized the possibility of preventing much of the blindness that he saw on all sides, and his work, which

began as a one-man organization, has grown to embrace five of the sovereign Indian states. Mr. Henderson was an active participant at the recent World Conference on Work for the Blind, and was affiliated, through the All-India Blind Relief Association, with the International Association for Prevention of Blindness. Readers of THE SIGHT-SAVING REVIEW will remember his interesting account of preventing blindness in India, published in the June, 1931, issue.

**Fifty Years of the Credé Prophylaxis.**—Marking a half century since Karl Sigmund Franz Credé found that a drop of silver nitrate, placed in the eyes of newborn babies, prevented babies' sore eyes or ophthalmia neonatorum, the St. Louis Society for the Blind offered the Robert Johnston essay prize for a paper on the Credé procedure. The prize was awarded for a paper tracing the history and slow acceptance of this preventive measure against life-long blindness. The discussion following the presentation of the paper was conducted by an ophthalmologist, an obstetrician, a public health representative and representatives of agencies for the blind. All agreed that ophthalmia neonatorum should become a rarity when medical, public health and legislative action have brought about 100 per cent enforcement of prophylaxis.

**Silver Anniversary of Illuminating Engineers.**—The twenty-fifth birthday of the Illuminating Engineering Society was celebrated in Pittsburgh, Pa., on October 16. Although the occasion had a historical significance, emphasis of papers and committee reports was on future growth and progress. Of special interest was the paper on "Recommended Foot-Candles," by M. Luckiesh and Frank K. Moss, of the lighting research laboratory of the General Electric Company, Nela Park, Cleveland. Although the progress in lighting has been tremendous in the past twenty years, they said that the present illumination levels are by no means ideal. "An appreciation of the great difference between threshold seeing and comfortable seeing is of particular value to the lighting specialist in recommending higher levels of illumination. This knowledge will enable him to point out that, in such cases where usual work is to be accomplished at a low level of illumination, the deficiency of the lighting is compensated by an additional drain on the energy-resources of the worker."

George W. Thomas pleaded for the inclusion of daylight specifications in municipal building codes. "To design buildings for good daylighting is as important as to design them for adequate strength," said Mr. Thomas. "While injuries from structural frailness may be catastrophes for a few, the day-by-day abuse of eyesight is a malignant condition that affects all the occupants of a building sooner or later."

"The Window as a Source of Light" and "Standards of School Lighting with Suggested Requirements for a School Lighting Code" were papers of particular import to those interested in sight conservation. All the reports and papers are obtainable in reprint form from the Illuminating Engineering Society, New York City.

**May Day, 1932.**—National Child Health Day, celebrating the efforts to give every child health and happiness, plays an important rôle in the prevention of blindness. Well-nourished children, living in a healthful environment, in communities where physical defects are noted and corrected at an early age, have a hundred more chances of preserving their eyesight than have their less fortunate brothers. This standard is the right of every child.

**Eye Compensation Awards.**—The routine examination of the eyes of industrial workers, protecting employers against unreasonable compensation claims, acts inversely as a guarantee of justice to the worker. Two cases recently heard in New York State emphasize the employee's side. A railroad worker, whose vision was recorded as normal in spite of a keratitis, was accidentally struck in the eye by a stream of air, and a subsequent loss of vision occurred. The court awarded compensation on the strength of the recorded visual estimate. A meter reader for a gas company slipped on an icy step, and aggravated a previously inflammatory condition of the retina; detachment of the retina followed. Compensation was again awarded on the basis of the company's previously recorded medical and visual report.

**Illumination Control for Classrooms.**—In a test carried on in a classroom in Tusculumbia, Alabama, it was found that high standards of illumination produced better grades among the students. To keep the illumination of the room at a steady point, a photo-cell

control was installed, and when daylight diminished, artificial illumination was called into play by this magic electric eye. Increasing daylight, inversely, caused the electric lights to be turned off. A three months' test found that artificial illumination was necessary about one-third of the time. Another school, in Jersey City, New Jersey, has also made use of the photo-cell to control classroom illumination, with excellent results.

**Trachoma Control in Cairo, Egypt.**—The fourth annual report of the Giza Memorial Ophthalmic Laboratory in Cairo, Egypt, focused its major attention upon the work being done to control trachoma. While trachoma infects a large proportion of the adult population, it is most disastrous in its attack upon infants and young children. Of 139 infants tested in one village, only 19 were found to have normal conjunctivæ. While the superstitions that foster uncleanness and neglect of the eyes in early childhood continue, little can be done to eradicate trachoma. Education in general hygiene is of prime importance in the fight against trachoma in Egypt.

**Gordon L. Berry.**—The National Society for the Prevention of Blindness has learned with sorrow of the untimely death, in Paris, of its former associate, Gordon L. Berry. The minute prepared and sent by the Board of Directors to the family of Mr. Berry expressed the sentiments of everyone who had the privilege of knowing him. It stated, in part: "In the early years of the National Society for the Prevention of Blindness, Mr. Berry rendered valuable service in this work as Field Secretary and in other ways contributed to this movement. His vibrant personality and his charm won him a hearing wherever he went, and he was able, by his convincing manner as well as by the substance of his message, to set forward the cause which he served. We recall the high value of his services to the Society and we record our sense of appreciation therefor."

**Health Inspection for Domestic Servants.**—Venereal disease in its complicating effects is usually thought to involve only the person infected. That its danger reaches out to innocent persons is apparent from news items which reach us from various sources.

In Westchester County, New York, a death certificate of a professional chauffeur showed that he had had syphilitic myelitis and optic neuritis. How far his vision was affected while he was still driving a car causes one to marvel that he had not been involved in a serious accident. Another professional chauffeur was still driving although his vision had been reduced two-thirds through syphilitic lesions, and only prompt removal from his position prevented an inevitable accident which would have involved the life and limb of many innocent persons.

In New Jersey a baby lost its sight from gonococcus ophthalmia because a nurse girl was infected with gonorrhea. The Health Department of New Jersey is now demanding that domestic workers in private families undergo at stated times the same careful health examination that must be taken by workers under the food inspection laws. A certificate assuring the freedom from disease of all sorts of a domestic worker would obviate any more such disastrous results.

**Revised Study of School Lighting in Great Britain.**—The report of the Sub-Committee appointed by the Technical Committee of the Illuminating Engineering Society in 1930 in Great Britain, finds that to compute the amount of natural illumination in schools it must be measured on a dull day; it further recommends a view of the sky from every position in the room, with light falling over the left shoulder, if possible, and through clear and unobstructed windows; it advises light-colored walls and ceilings and a careful avoidance of objects which might be a source of glare.

Following its work on the natural illumination of school rooms, the Sub-Committee undertook a revision of the 1913 code of artificial lighting for school buildings. Finding no modern guide to artificial lighting in the schools in Great Britain, the Sub-Committee submits the following recommendations for general guidance, pending further study and investigation:

1. Five foot-candles of light on desk and tables for usual school work, with eight for special work, and sixty per cent more for blackboards; no part of the school should have less than one foot-candle;
2. Avoidance of direct or reflected glare by use of proper luminaires, soft matt surfaces and unglazed paper in books;

3. Avoidance of shadows; 4. Consideration of placement of light sources; 5. Periodic inspection and maintenance of artificial light sources.

**Annual Meeting of the International Association for Prevention of Blindness.**—The annual meeting of the International Association for Prevention of Blindness took place at the Association's Paris headquarters on November 14, 1931. Among the points considered at the meeting were the creation of national committees in various countries for prevention of blindness activities and preventive measures against industrial eye accidents.

**Price of an Eye.**—"What is the value of an eye?" asks Dr. H. Villard of Montpellier. He finds that the loss of one eye alters visual acuity, lessening professional or industrial capacity. While the loss is heaviest in the years immediately following the casualty, it is compensated for in later years. To what extent the loss of an eye is measurable in monetary terms can be estimated only by world-wide investigation by a joint committee of representatives of the labor unions and ophthalmologists.

**Save Your Eyes.**—Under this title, *L'Animateur des Temps Nouveaux* of Paris devotes itself, in the 1931 issue, to the message of the International Association for Prevention of Blindness. Each phase of sight conservation and prevention of blindness is touched upon in popular tabloid style. Structure and function of the eye, amount and distribution of blindness and common causes of blindness are graphically illustrated.

**Dr. Holloway Joins National Society Board.**—The National Society for the Prevention of Blindness is fortunate in having as a new member on its Board of Directors Dr. Thomas B. Holloway, formerly a member of the advisory committee. A professor of ophthalmology at the Graduate School of Medicine of the University of Pennsylvania, Dr. Holloway is an attending surgeon at the Wills Eye Hospital and the author of many important papers on ophthalmological subjects. His scientific and practical experience as an ophthalmologist and at the Overbrook School for the Blind, and his excellent public health point of view, are invaluable contributions to the National Society.



**National Society Notes.**—Mr. Lewis H. Carris, managing director of the National Society, served on the program committee of the Third Annual Greater New York Safety Conference held at the Pennsylvania Hotel, New York City, February 24–25, 1932. He also acted as chairman of the session on "The Eye—Its Relation to Safety," on the afternoon of February 24.

Representing the National Society at the meeting of the International Council for the Education of Exceptional Children, in Washington, D. C., February 18 to 20, Mr. Carris discussed "The National Society for the Prevention of Blindness." While in Washington he also represented the Society at the meeting of the National Education Association, February 20 to 23.

In response to requests from public-spirited and educational organizations in Hawaii, Mrs. Winifred Hathaway, associate director of the National Society, is in Honolulu making recommendations for establishment of sight-saving classes and for a general conservation of vision program. En route, she will make many stops at points whence requests have come for her services in sight-saving class and prevention of blindness work.

At the conclusion of a field study on cataract, the students in the medical social eye work course at Massachusetts Eye and Ear Infirmary, Boston, called in Miss C. Edith Kerby, statistician of the Society, for consultation and advice on statistical presentation of their material.

**Addendum.**—We have received several communications regarding a statement appearing in the article on "Venereal Disease and Prevention of Blindness," in the past issue of THE SIGHT-SAVING REVIEW, referring to the lack of a law for the control of ophthalmia neonatorum in Pennsylvania, and a request has come for clarification. Strictly speaking, it is true that there is no law, but it is only fair to state that the lack of actual legislation is effectively supplied by a regulation of the department of health of the Commonwealth of Pennsylvania, adopted April 13, 1926.

## Current Articles of Interest

**Subnormal Accommodation**, Avery deH. Prangen, M.D., *Archives of Ophthalmology*, December, 1931, published monthly by the American Medical Association, Chicago, Ill. Because ocular symptoms of headache, dizziness, eyestrain and apparent far-sightedness frequently do not respond to refraction, the writer urges that a study of accommodation be included routinely in the refraction test. Subnormal accommodation is often a symptom of a focal infection, particularly of the teeth or tonsils; treatment of the cause, and correction, are prescribed for improvement.

**The Place of the Otorhinolaryngologist in the Treatment of Eye Diseases**, E. Ross Faulkner, M.D., *New York State Journal of Medicine*, November 15, 1931, published twice a month by the Medical Society of the State of New York, New York, N. Y. In discussing the intimate relationship between disorders of the nose and eye, three cases are cited where clearing of the sinus condition restored vision to the affected eye.

**Ultra-Violet Ray Treatment of Trachoma**, Montagu Marston, M.D., *The British Journal of Ophthalmology*, December, 1931, published monthly by the British Journal of Ophthalmology, Limited, London, England. The writer gives the details of a trachoma treatment which is neither painful nor protracted, with which he has had success. The tungsten-arc lamp, used to sterilize the conjunctival sac, proved efficacious in more than 200 cases in Hong Kong, and the patients expressed gratitude for the ease and relief of the treatment. The author recommends this procedure for schools or communities where trachoma is prevalent.

**Malignant Glaucoma**, John N. Evans, M.D., *Medical Times and Long Island Journal of Medicine*, December, 1931, published monthly by the Medical Times Company, New York, N. Y. Malignant glaucoma in a non-syphilitic patient responded to treatment with salvarsan, when operative intervention was impossible. The prompt drop in blood and intra-ocular tension in this case, and

again in a subsequent one, suggests that a further study of this drug in the treatment of glaucoma should be made.

**Typhoid-Paratyphoid Vaccine in Ocular Inflammations**, Harold F. Whalman, M.D., *California and Western Medicine*, December, 1931, published monthly by the California Medical Association, San Francisco, Calif. Twenty-one cases of ocular inflammation, treated at the Los Angeles General Hospital by the Howard method of typhoid vaccine, showed immediate improvement; while the need to find the causative infection remains, this treatment relieves the inflammation.

**The Myopic Child**, E. K. Hallock, M.D., *Medical Times and Long Island Journal of Medicine*, November, 1931, published monthly by the Medical Times Company, New York, N. Y. Although 80 per cent of children are born with hyperopic eyes, by the age of sixteen the hyperopia in many cases is replaced by myopia. It cannot be said that the eye load of school work is solely responsible for this increase of myopia, since factors of heredity, illness or accident may predispose toward lengthening of the eyeball. Because the myopic child, by nature of his defect, is inclined to close eye use, the trouble progresses in a vicious circle. Treatment includes wearing of glasses, frequent eye examinations, restriction of close eye work, and good illumination. The author recommends careful eye examination of all children before they enter school.

**Bacterial Flora in Egyptian Trachoma**, Phillips Thygeson, M.D., *American Journal of Ophthalmology*, November, 1931, published monthly by the Ophthalmic Publishing Company, St. Louis, Mo. In 16 cases of Egyptian trachoma seen in young children and adolescents no *Bacterium granulosis* was found; the author concludes that the trachoma found in Egypt does not differ essentially from that found in the white and Indian population of North America.

**The Work of the Committee on Central Statistics for the Blind**, Evelyn C. McKay, *Outlook for the Blind*, December, 1931, published monthly by the American Foundation for the Blind, Inc., New York, N. Y. In an effort to compile accurate figures on the blind in the United States, it was found that no uniform measure

of blindness existed. The Committee on Central Statistics for the Blind is endeavoring to formulate procedures for securing more accurate statistics; tentative classifications and record forms have been prepared by Committee members and will shortly be put to trial use.

**The Care of the Eyes**, Marcelli Shaw, M.D., *New Health*, January, 1932, published monthly by the New Health Society, London, England. Pointing out the fact that 50 per cent of blindness in England is preventable, the writer urges care of the eyes from early childhood, preschool vision tests, and control of venereal disease which, alone, causes 50 per cent of blindness throughout Europe.

**The Etiology of Chronic Iritis**, Ernest E. Irons, M.D., *American Journal of Ophthalmology*, December, 1931, published monthly by the Ophthalmic Publishing Company, St. Louis, Mo. To determine the cause of chronic iritis we must consider the relative prevalence of disease in the community; allergic as well as focal infections may be the cause in many cases.

**Information that can be Furnished by the Ophthalmologist**, Henry N. Blum, M.D., *New Orleans Medical and Surgical Journal*, December, 1931, published monthly by the Louisiana State Medical Society, New Orleans, La. Complete report of the findings of the ophthalmological examination may help in general diagnosis; eye findings that bear upon general diagnosis include: muscle paralysis, a symptom of intracranial pressure or of brain syphilis; exophthalmos, significant of goiter; corneal involvements as signs of nutritional deficiencies.

**Tuberculin Treatment of Phlyctenular Keratitis**, James Williamson, *The Medical Officer*, December 19, 1931, published weekly by the Medical Officer, London, England. Phlyctenular keratitis, attributed to active or latent tuberculosis and to general poor standards of living, may leave the affected child mentally as well as physically handicapped; tuberculin treatment, added to the usual local measures and improved hygiene, has proved a speedy and successful cure in the limited number of cases cited.

## Book Reviews

SEEING—A PARTNERSHIP OF LIGHTING AND VISION. By M. Luckiesh and Frank K. Moss. Baltimore: The Williams and Wilkins Company, 1931. 241 p. plus 26 p.

This is an interesting and suggestive book. We are forced to say suggestive, rather than conclusive, because the authors are striving for results which approach accuracy or precision, terms to which they devote a chapter which, it must be confessed, is confusing rather than illuminating. The fault here, as elsewhere, is redundancy and the repetition of self-evident facts.

It is obvious that safe and comfortable vision is dependent on adequate light and it hardly needs 19 chapters to elaborate that fact. The enthusiasm of the authors is admirable, however, and their industry in the cause of good lighting is shown by the bibliography in which, among the 48 references, their names appear 27 times.

Apart from the technical details of light and its production, use and distribution, with which the authors are well fitted to deal, there appears a border ground, "a new science of seeing." "Although excellent scientific researches during the nineteenth century laid the foundation of the science of vision, the viewpoint of the investigators preceding the present century can scarcely be considered to have been that of *seeing*." There is a passing allusion to Helmholtz and none to Donders or to Duane or Ferree and Rand among the contributors to the science of vision.

This book, then, must be treated on its own ground as a treatise on the Art and the Science of Lighting. The eye remains the organ of vision and the infinite variety of its changes eludes the lighting specialist or, to dignify an honorable profession, the illuminating engineer.

The optometrist is a product of this century and is here classed with the physician trained by years of observation to a knowledge of disease and its effect on the eye, which often eludes the measurer of eyes who thinks in terms of lighting and glasses and who too often offers glasses where they are not needed or when a graver danger threatens. But there should be a common field where the

ophthalmologist, often also untrained in the valuable data here offered, and the physicist may meet.

Space does not permit a discussion of the chapter on Fatigue, and other parts of the book in which the problems have baffled wiser men.

The diagrams are in some cases helpful. The suggested visual tests do not commend themselves as useful except for research in laboratories. Until the ideal method for which the authors are striving is achieved, we must be content with our antiquated nineteenth century procedure.

Ophthalmology has made great progress in this century and the Science or Art of Lighting holds a flaming torch, but we see no need of a new science of *Seeing*.

The concluding paragraphs of the final chapter are excellent. They so well express the feelings of those enlisted in the struggle (for that it still is) for the conservation of vision that they may be quoted in closing this brief review of a book which contains much stimulating and valuable matter:

"And we need not fear the stimulating effect of light. We evolved under enormously greater intensities outdoors than we will use indoors for centuries—if ever. Good lighting makes it possible for us to do more work with less effort. We see quickly and accurately without wasting energy moving the work, altering our position, straining the eyes, etc. And we also conserve energy through satisfaction instead of dissipating it in annoyance and wasted time—whether we are conscious of this or not.

"Artificial light made our present civilization possible. Perhaps it may be considered the most important tool produced by man. It is essential to vision and the latter is the most important sense, for it is responsible for much of the economic value of human beings. But the age of adequate, efficient, inexpensive and controllable artificial light has just arrived. We have been projected so suddenly out of the 'dark age' of feeble flickering flames that most of us are still bound by the traditions of the past."

COLMAN W. CUTLER, M.D.

INDUSTRIAL HYGIENE FOR ENGINEERS AND MANAGERS. By Carey P. McCord, M.D. New York: Harper and Brothers, 1931. 336 p. Ill.

For a long time a source of information on industrial hygiene has been needed, especially for engineers and executives.

This volume presents the problems of emergency for injuries, infection and disinfection, occupational diseases, accident prevention, physical examinations, health promotion in small plants, dental services in industry, compensation for accidents and diseases, rehabilitation measures, and mutual benefit associations.

A very useful addition to the book is the list of sources of technical information on industrial hygiene.

In these days of the close association of accident prevention and health conservation in industry, this volume should fill a long-felt want for a reference work, particularly for the use of engineers and executives who must assume the responsibility for certain administrative aspects of industrial safety and health.

C. O. SAPPINGTON, M.D.

*National Safety News*

THE WILLS HOSPITAL OF PHILADELPHIA. By William Campbell Posey, M.D., and Samuel Horton Brown, M.D., Philadelphia: J. B. Lippincott Company, 1931. 340 p. Ill.

The Wills Eye Hospital of Philadelphia has just recently celebrated its one hundredth anniversary by moving into a new and beautiful building, and as part of the celebration two of the alumni have written a history of the institution. Such volumes have been done before on similar occasions and they are generally very dry reading. This one is not, for the authors have given us a very interesting picture of the conditions existing in one of the great medical centers of America one hundred years ago; of the gradual evolution of American ophthalmology, and of the part the Wills Hospital and its staff, ever in the forefront, have played in that evolution.

Philadelphia in those days was a city of 135,000 people, drawing additional material from the rapidly growing West and the South, and yet it contained only 69 physicians. Nothing could have counted except the gravest and most emergent illnesses. In the winter, smallpox; in the summer and fall, typhoid, tuberculosis, and scarlet fever; and diphtheria knew no seasons.

The great men of that day prided themselves on being general practitioners who did surgery when they could, and any man who attempted to restrict his practice in any way was frowned upon as



"putting on side," or was even suspected of being a charlatan. Those were the days when the surgeon operated in a dress coat, carefully rolling up his sleeves before he began; when, because there was no anesthesia, speed was the chief index of skill; and because germs were unknown and infection almost universal, the mortality rate forbade all but a short list of operations.

There must have been a much larger proportion of blindness then than now; and there were many more acute infections and injuries involving the eyes. But it is astounding to see how little could be done a hundred years ago for the conditions that take most of the ophthalmologist's time today. If one's sight failed he went to the optician and picked glasses to suit himself. If they did no good he perhaps consulted a physician who perforce labelled him amblyopic or amaurotic, according to the amount of vision left. Ophthalmology was practically limited to external eye diseases. Cataract was almost the only surgical operation, and, being done in a clean eye and with instruments too delicate for other use, was seldom attended by the sepsis common to most surgery of the time.

It was under these conditions that James Wills left his modest fortune to found a charitable hospital which he dedicated to the lame and the blind. It was surely the day of small things, for we read that his bequest was something over \$125,000 and that after the land and building were paid for, about half the sum remained to provide the annual income of some \$3,000. The first attendants were general surgeons, many of them among the great names of that day. Our authors tell us that when lame patients appeared in the spirit of the dedication it caused no difficulty, for the same surgeons were fully as skilled in the treatment of club-foot as of cataract, as their operative records plainly show.

Such was ophthalmology not only in Philadelphia but all over the world almost up to the time of the Civil War. It was limited to external diseases and to cataract. No one had seen the interior of a living human eye, no one knew how the eye focussed or had any better method of fitting glasses than to let the patient pick out his own from the pile. The Wills Hospital itself did not own a case of trial lenses until 1865.

In 1847 an Englishman named Babbage devised an ophthalmoscope. He showed it to Wharton Jones, the great London

ophthalmologist of the day, who could see no particular use for such an instrument, and the mortified inventor dropped the idea. Four years later von Helmholtz published his instrument and opened up a new world for the ophthalmologist. Many things that had previously inspired pompous guesswork became plain as day, and amaurosis and amblyopia ceased to be competent diagnoses.

At almost the same time came Donders, who, by putting refraction on a scientific basis, made possible a scientific treatment of functional troubles, and von Graefe, who revolutionized ophthalmic surgery. Of him our authors say, "there was no subject in ophthalmology with which he was not familiar, and none on which he had not expressed his opinion."

We find the surgeons of the Wills Hospital in 1873 ascribing an outbreak of "contagious catarrh" in their wards to crowding and bad ventilation, and, on the strength of it, getting two new wards with more space and better air.

And then came Pasteur, who showed the world germs, and Lister, who applied Pasteur's theories and gave us antiseptics, and Koller, who discovered cocaine and made deliberate eye surgery possible. There were some surgeons who considered even this a useless refinement, and one of the Wills internes records that he had to "bootleg" a few drops of cocaine into the eyes of every patient of one of the surgeons who prided himself on operating without anesthetic.

From that time on ophthalmology became naturally and necessarily a specialty because of its complicated instruments, and mathematical formulæ, and special pathological problems. No longer do we find men like Donders who lectured on forensic medicine, anthropology, and biology, as well as ophthalmology.

Our authors tell us of the leading part their institution and its surgeons have played in this growth of ophthalmology in America; of their great names and their specific contributions to ophthalmology and its literature; of the foundation of influential societies and special journals; of the part they have played in social medicine and the prevention of blindness. They also give us a glimpse of what was happening contemporaneously in other institutions and in other lands.

To the physician it is all most interesting; the brief biographies

of the long line of surgeons, colorful and appreciative; the evolution of an old operation like that of cataract as revealed by a hundred years of surgical records; of the sudden appearance in those records of newcomers like glaucoma, and the varied and still varying methods of treating it.

Each epoch-making drug or instrument is catalogued as it appeared, with the resulting changes in professional practice, i. e., cocaine, the ophthalmoscope, the tonometer, the perimeter, the tangent screen, and radiography, which have gradually carried us back from the contemplation of external diseases through the interior of the eye into the very brain itself.

And now the Wills Eye Hospital, after a hundred years, has a new and beautiful building with the capacity and equipment equal to any in the land, and our authors are already hoping that in some way the means may be provided for research which some of its contemporaries derive from their affiliation with some great university.

It is in a sense with the changing of a few names and dates the story of ophthalmology in your city and mine, for all went through more or less the same evolution at about the same time. We can only hope that if our pet institutions are old enough or important enough to merit a special history, authors may be found who can bring to the task the same patient research and sympathy and equal ability to make an interesting story out of what might have been a dull chronology.

ELLICE M. ALGER, M.D.

EYE, EAR, NOSE AND THROAT MANUAL FOR NURSES. By Roy H. Parkinson, M.D. Second edition, revised. St. Louis: The C. V. Mosby Company, 1931. 217 p. Ill.

The writer has revised the manual written five years ago for student nurses. It was primarily intended to save the time of the lecturer. "In presenting this manual, the author had in mind a small non-technical treatise that would be very concise and free from debatable questions."

Of the 217 pages, 72 are devoted to a discussion of the eye—its diseases, treatments, operations—and to the public health problems pertaining to this organ. The author has stressed throughout

the close relationship of eye diseases to the general physical condition of the patient. The manual should be of great assistance to the teacher.

The writer is to be commended for the simple presentation of the subject matter. It does seem, however, that the paragraphs on anatomy, physiology and the errors of refraction are not comprehensive enough for the student to get a clear working knowledge of the subjects. It is true that the nurse will not make diagnoses nor prescribe treatments, but she should have an intelligent understanding of both in order to carry out successfully the physician's instructions and to co-operate in the health education program.

The examination of school children's eyes is discussed under the heading, "Problems Met by the Public Health Nurse." Vision testing of preschool children is not mentioned. A discussion of the importance of vision testing before the child enters school and of the technique of such tests would add greatly to the usefulness of the manual. The author recommends the use of the picture chart for testing the vision of persons who cannot read. Many oculists do not consider this chart as satisfactory as the Symbol E chart.

MARY EMMA SMITH, R.N.

A QUANTITATIVE STUDY OF ACHROMATIC AND CHROMATIC SENSITIVITY FROM CENTER TO PERIPHERY OF THE VISUAL FIELD. By Hazel Austin Wentworth. Princeton: Psychological Review Company, 1930. 189 p.

This excellent monograph, prepared under the direction, as the author states, of Dr. Ferree and Dr. Rand, continues in part their valuable work and adds a new example of scientific patience to the rather scanty list in recent years of objective productions which, while based on precise laboratory study, throw new light on clinical problems. It is to be hoped that the author will pursue the lines so clearly indicated and so much needed, which will make diagnosis by perimetry more trustworthy. Most men who have worked with colors have felt the need of standardization and the crudeness of present methods, and, lacking the opportunity and the material to study the sensitivity of the retina with a regard for the several factors which the author shows to be essential, have had recourse to the well-known Duane-Bjerrum screen or its modification, with

small white or gray objects on a black background, except for the detection of color scotomata in such conditions as toxic amblyopia.

Whether the criteria set by the author are attainable is a question not easy to answer, but her statement of "some of the misconceptions that have been held with regard to the results that have been obtained by perimetry" clarify the issue, although one may have to discard ideas such as interlacing of fields, and even question the pathological significance of scotomata, relative or even absolute: "An inspection of the sensitivity curves presented in this paper reveals, in places, dips which may be mistaken for relative scotomata. Small patches of absolute insensitivity to color are also frequently found in eyes which, from all other recorded evidence, are classed as non-pathological." Much more might be quoted, but this is sufficient to indicate the importance of the work.

This monograph is an important contribution to a subject which, as the numerous references indicate, has been sadly in need of the painstaking, scientific treatment it here receives.

COLMAN W. CUTLER, M.D.

## Contributors to This Issue

**Dr. William Campbell Posey**, former president of the American Ophthalmological Society, attending surgeon at the Wills Eye Hospital, professor of ophthalmology at the Graduate School of Medicine of the University of Pennsylvania, and author of *Hygiene of the Eye*, is a member of the Board of Directors of the National Society.

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**Miss Mary C. McLelland** is national secretary of prevention of blindness of the Canadian National Institute for the Blind.

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As executive director of the American Social Hygiene Association, **Dr. William F. Snow** has often co-operated with the National Society in pointing out the close connection between prevention of venereal disease and the conservation of vision.

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A member of the staff of the General Electric Company in New York City, **Mr. Thomas A. Pilkey**, lectures annually to several thousands of people, in both technical and lay groups, on the subject of illumination.

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**Miss Eleanor P. Brown** is secretary of the National Society for the Prevention of Blindness; medical social service in eye clinics has been her special interest since its inception and she has represented the National Society in many medical social projects.

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Among the book reviewers: **Dr. Colman W. Cutler** and **Dr. Ellice M. Alger**, New York City ophthalmologists, have both been introduced in previous numbers of *THE SIGHT-SAVING REVIEW*; **Dr. C. O. Sappington** is director of the Division of Industrial Health of the National Safety Council; **Miss Mary Emma Smith** is director of nursing activities of the National Society.

